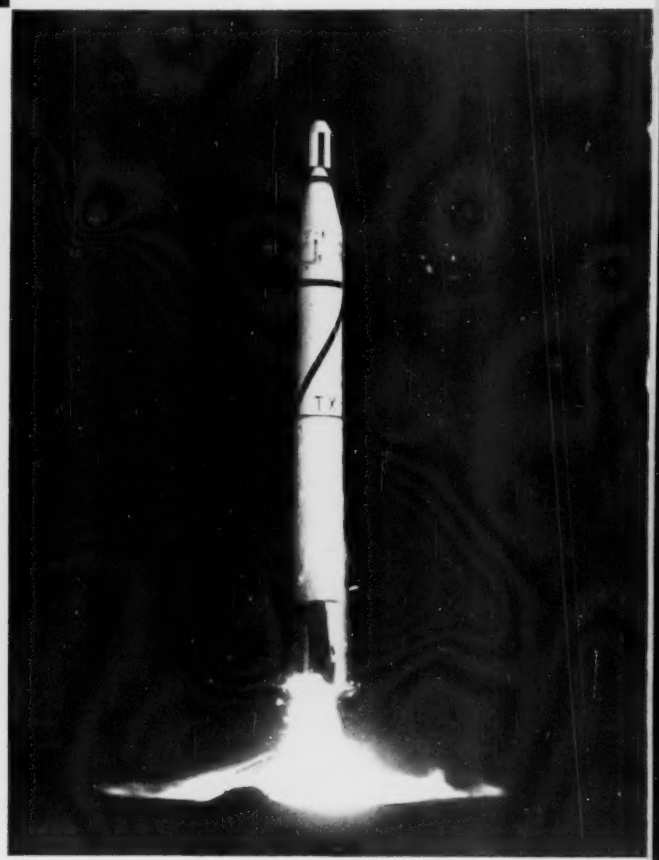
FEBRUARY, 1958

American Engineer



IN THIS SPECIAL NATIONAL ENGINEERS' WEEK ISSUE . . .

Ten vital questions facing the engineering profession today as America prepares for the "age of space" are answered by a panel of leading figures in industry, government, and education. Here are the twelve members of the panel:

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Former Vice President, Georgia Tech

DR. S. F. SINGER
Physicist, University of Maryland

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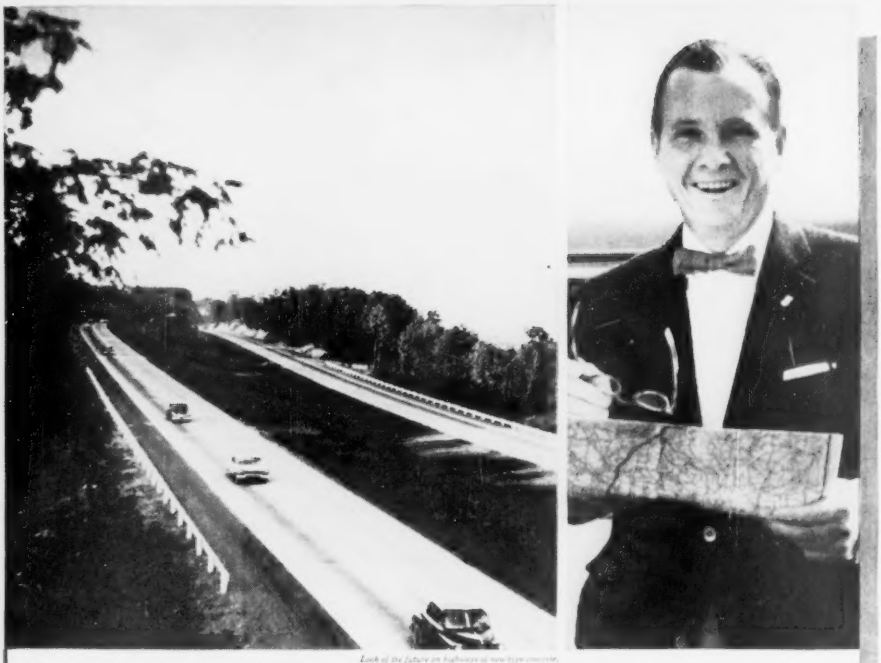

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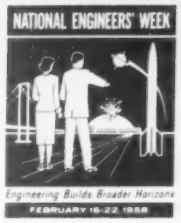
(Circle 1 on Inside Back Cover)

American Engineer

FEBRUARY

1958



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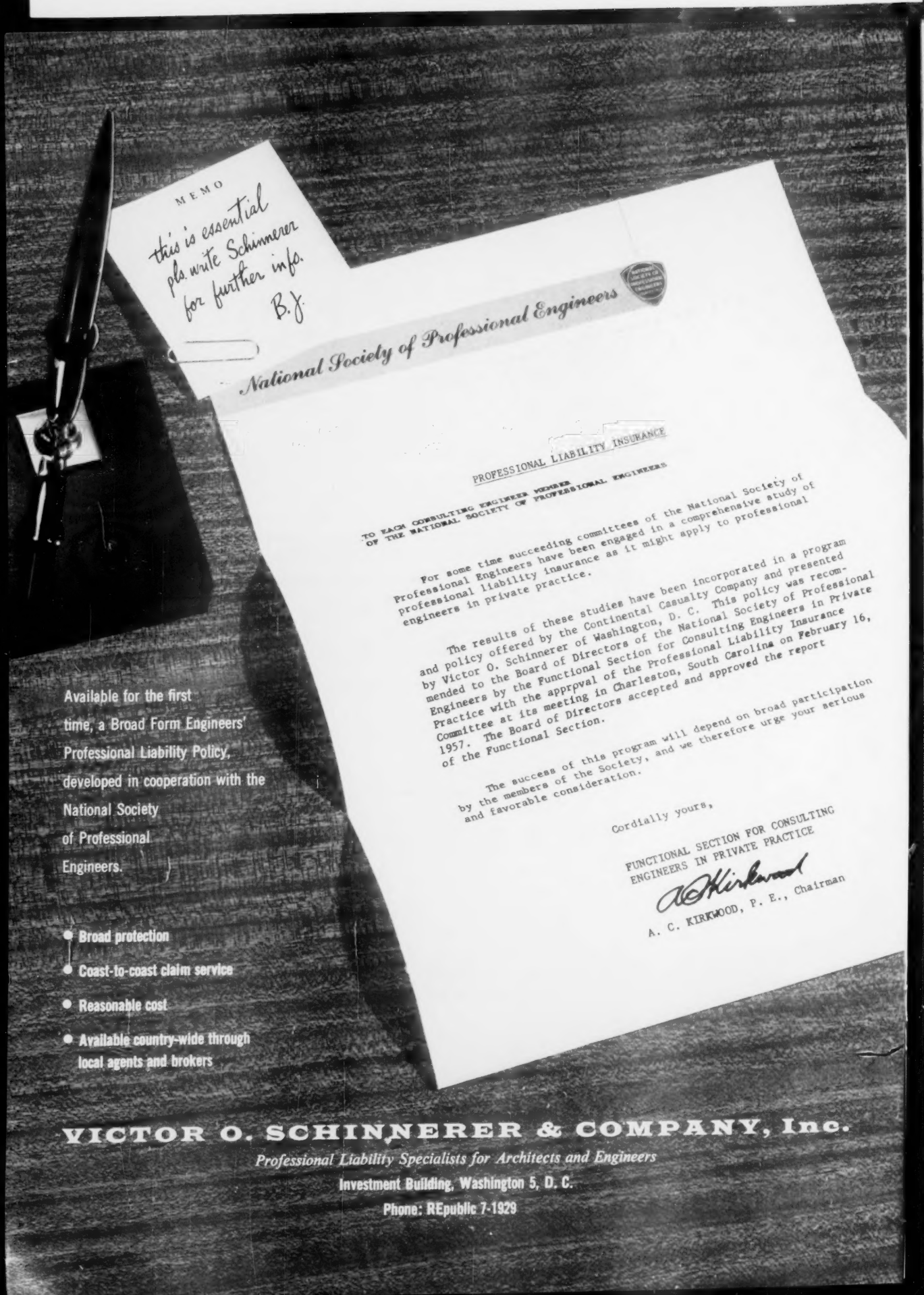
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Letters to the Editor

The Union Problem . . .

Dear Editor:

In his comment in the November issue of AMERICAN ENGINEER on the organizational ambitions of the American Federation of Technical Engineers AFL-CIO, Mr. Paul H. Robbins voices NSPE's belief "that professional personnel should have the right to determine independently their wishes with respect to the mechanism for handling their relations with their employers."

With this, we, as professional engineers, must all agree. Towards this, too, we have the support of the Taft-Hartley law. But here's the rub: Inasmuch as the engineering societies, including NSPE, consider that it is not within their province to provide such a mechanism or even to suggest what form it should take, how are "rank and file" engineers comprising over eighty per cent of the profession, to effectively "handle" relations with their employers, where such handling would be beneficial to both.

This is the crux of the problem with which "rank and file" engineers in all branches of the profession are confronted if they are to avoid the pitfall of unionism. NSPE's comprehensive brochure "Criteria for Professional Employment of Engineers" outlines in detail what should be engineer-employer relationship. How these recommendations can be *implemented* without recourse to unionism is the question before us, which, so far, has evaded a solution. Why cannot engineers, whose daily task it is to solve problems for others, solve this one for themselves?

Peter M. Simone, P.E.
New Rochelle, N. Y.

► Editor's Note: A policy statement on engineer-management communications, adopted by the NSPE Board, suggests that communications mechanisms "may take the form of frequent company-sponsored conferences, engineers' clubs, an independent organization of the engineering personnel, including those in supervisory positions, or a functional section of the local chapter of the professional society." The appropriate organizational machinery should reflect local needs and conditions. The Engineer-in-Industry Subcommittee of NSPE will be pleased to provide specific advice, if requested.

Unity . . .

Dear Editor:

A recent editorial in the *Engineering News-Record* and a Letter To The Editor, both published in the October issue of the AMERICAN ENGINEER, claim that the "Coover Plan" of coordination of activities between the AIEE and the NSPE would inherently require the NSPE to admit into its organization engineers who are not registered professional engineers.

I do not think that any such interpretation is a vital part of the "Coover Plan." The essential features of that plan were for AIEE to concentrate in the future on electrical engineering and for NSPE to continue its concentration on professional rather than technical engineering. There is nothing in these features that require either organization to change its present membership requirements. Likewise, there is nothing in these features that prevent either organization from changing its membership requirements, or from having new classes of members. The "Coover Plan" recommends that NSPE should enlarge its membership to be more representative of the entire engineering profession. Of course, this can and is being done effectively at present by increasing NSPE membership from among the many non-members who are registered professional engineers.

I am a member of both organizations but I believe that many engineers outside of NSPE would be glad to see NSPE represent them professionally even though they are not NSPE members, just as the average non-AAA motorist is glad to see the American Automobile Association work with Congress and with the state legislatures on behalf of all motorists.

The "Coover Plan" seems to be a practicable one with sufficient flexibility to permit each organization to work out its own problems as they come up. It is supported by many engineers and I hope that it will be endorsed.

The *Engineering News-Record* and the *Electrical World* have been editorially critical of the "Coover Plan," but their arguments seem to me to be based on a lack of information as to the policies and practices of NSPE, and they suggest no attractive alternative.

Engineers who are owners, managers, or who represent employers have contributed much to the technical accomplishments of AIEE. However, many AIEE members fear employer domination of professional activities now carried on by AIEE. NSPE has avoided this difficulty by wise selection of committee chairmen, etc. It can continue to do so, and under the "Coover Plan," it would have a greater obligation to do so.

(Continued on page 63)

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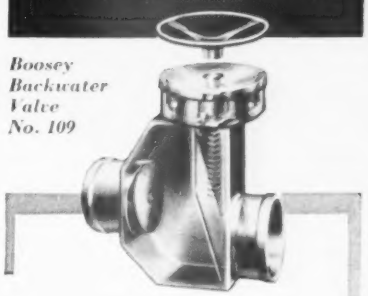

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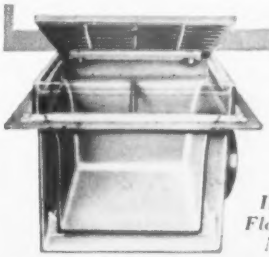

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PROFESSIONAL NEWS IN CAPSULE FORM

A Roundup of Late Events for Professional Engineers

37,039 Awarded Degrees In Engineering in 1957

Some highlights of the ninth annual survey of engineering enrollments and degrees conducted by the U. S. Office of Education in cooperation with the ASEE reveal:

37,039 engineering degrees were conferred for the year 1956-57 by higher educational institutions in the United States—31,211 of these were awarded as bachelor's or first engineering degrees.

Total engineering enrollment reached the highest level in history—297,077 students—an increase of 7.2 per cent over a year ago.

Engineering freshmen enrollment, 78,757—second largest in history.

Tax Credit Legislation Urged By Elisha Gray

Elisha Gray II, president of Whirlpool Corporation, recently urged upon the Ways and Means Committee of the House of Representatives, legislation to provide a tax credit as an incentive to taxpayers to make contributions so as to increase basic scientific research in the colleges and universities.

"The spectacular technological and scientific advances by the Soviet Union have made it abundantly clear that, unless the United States accelerates its basic scientific research, it will inevitably forfeit its world leadership," Mr. Gray declared in his statement to the Committee.

Employing a chart to emphasize his point, Mr. Gray called attention to the fact that "basic scientific research has been the financial step-child of both the Federal Government and private industry."

"When you consider that an expenditure of $435 million for basic research—the very life blood of our military and industrial technology—was only one-eighth of one per cent of our Gross National Product, it is, perhaps, no wonder that the Soviet Union was the first to usher in the dawn of the age of space," Mr. Gray stated.

Admiral Joseph J. Jelley Opens Engineering Office

Rear Admiral Joseph F. Jelley, an NSPE member, has opened an office for the practice of civil engineering in Colorado Springs, Colo.

Admiral Jelley, who recently retired from the Navy Civil Engineer Corps after thirty years of service, was chief of the Bureau of Yards and Docks during the Korean War. He later served as director of construction for the Department of Defense. His most recent assignment was Commander of the Tenth Seabee Brigade with headquarters at Pearl Harbor.

He is a past president of the Society of American Military Engineers.

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Construction Leaders Expect Good Year in '58

Even taking into account a lower level of capital spending by industry, the nation's leading industrial engineering and building firms believe 1958 will be one of its best years.

This was the concensus of opinion expressed by members of the National Constructors Association as it concluded its annual meeting at the Roosevelt Hotel in New York in January. The National Constructors Association is composed of major nationally-operating engineering and building firms engaged in the construction of steel mills, chemical plants, petroleum refineries, power plants and other facilities for heavy manufacturing industries.

"Construction volume in 1958 is not expected to equal the record high of 1957," C. D. Haxby, president of the Association, said. "However, our member companies are anticipating another good year—a year that probably will be second or third best in the history of our industry."

Enrollment Increases In Engineering Classes

An increase of seventeen per cent in the number of working engineers seeking advanced degrees in the night engineering program at Saint Louis University's Institute of Technology has been announced by Gerald E. Dreifke, program director.

Enrollment for the current semester rose to 246 from 210 last year, with a marked increase in the number of full-time students, Mr. Dreifke said.

The students, almost all of whom seek master of science degrees, represent fourteen St. Louis firms, which pay some or all of the tuition for their employees, either as part-time students or full-time students on academic leave from their firms.

McDonnell Aircraft Corporation has the most engineers enrolled in the night classes with 117. Emerson Electric Manufacturing Company has forty-nine; Vickers Electric Division, sixteen; Universal Match Corporation, twelve, and Monsanto Chemical Company, eleven. Others, with less than ten enrolled, include American Steel Foundries, Greenleaf Manufacturing Co., Minneapolis-Honeywell Regulator Co., Moloney Electric Co., Southwestern Bell Telephone Co., Sverdrup & Parcel, Union Electric Co., Wagner Electric Co., and White-Rodgers Electric Co.

AIHA Annual Meeting Set for Atlantic City

The nineteenth annual meeting of the American Industrial Hygiene Association will be held in Atlantic City, N. J., April 21-26. Over one hundred technical papers will be presented on topics from the fields of radiation, air pollution, noise, toxicology, engineering control of hazards, and analytical chemistry.

Professional hygienists and interested persons from industry, public health, labor and management groups, schools and universities, safety and technical organizations, medical institutions, and from the armed forces will convene to discuss current problems and recent advances in these fields.

Headquarters for the AIHA activities will be the Claridge Hotel. Registration will commence Sunday, April 20, at the Claridge Hotel and at Haddon Hall.

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ASHAE Confers Honor Of Fellow on Eight

The American Society of Heating and Air-Conditioning Engineers at a recent meeting of the Council of the Society conferred the honor of Fellow of the Society on eight outstanding members prominent in the heating, ventilating and air conditioning profession.

Those honored are Albert L. Baum, Jaros, Baum & Bolles, the late Alfred C. Buensod, Buensod-Stacey, Inc., Professor Carl F. Kayan, Columbia University, all of New York, N. Y., Irwin W. Cotton, Indianapolis, Ind., Edward L. Crosby, Henry Adams, Inc., Baltimore, Md., Edmund P. Heckel E. P. Heckel & Assoc., Chicago, Ill., Professor Emeritus Frank B. Rowley, University of Minnesota, Minneapolis, Minn., and George M. Simonson, San Francisco, Calif.

Messrs. Baum and Rowley are members of NSPE. Mr. Buensod had been a member.

Presentation of the certificates of Fellow grade were made in Pittsburgh on January 27 at the welcome luncheon in the Penn-Sheraton Hotel on the opening day of the sixty-fourth annual meeting of the Society.

Edward H. Barry Named ASME Fellow

Edward H. Barry, a member of the Massachusetts SPE, has been awarded the honorary grade of Fellow in The American Society of Mechanical Engineers in recognition of his engineering achievements.

A mechanical engineer with Stone & Webster Engineering Corporation, Mr. Barry is chairman of the Massachusetts State Board of Registration of Professional Engineers and Land Surveyors.

ASCE Meeting Set For Chicago, Feb. 24-28

Engineering achievements and problems of the Midwest dominate the themes of papers to be presented at the Chicago convention of the American Society of Civil Engineers at the Hotel Sherman, February 24 to 28.

But while the vast building and construction program of the central states is highlighted, the convention schedule is amply supplemented by papers covering every branch of interest to the engineer, as well as many papers that will attract the interest of the general public.

More Professionals Needed in Future

New production techniques will demand a much greater percentage of professionally trained men and both semi-skilled and skilled workers to meet the nation's growing needs in the next fifty years, a Ford Motor Company official said recently.

Andrew A. Kucher, vice president —engineering and research, told the annual meeting of the Society of Automotive Engineers that there would be an "enormous increase in productive capacity" and that it would be accompanied by a decrease in the need for unskilled workers.

Speaking on production in the long-range future, Mr. Kucher saw no "push-button utopia where machines will do all our work."

"Consider the infinite variety of tasks to be performed in the world today," Mr. Kucher said. "For the most part, they can be accomplished only through that unique human correlation of an elaborate brain, with great manual dexterity."

During the first half of this century, Mr. Kucher reported, "the use of unskilled workers has been reduced from thirty-six per cent to less than twenty per cent, whereas the use of semi-skilled workers has increased from fifteen per cent to almost twenty-three per cent."

In this same period, he said, the percentage of professionally trained workers has doubled and science degrees have increased at a far greater rate than the rise in population.

"We can accept the general effect of these growth patterns," he said, "and predict that an enormous increase in productive capacity must evolve within the foreseeable future."

O. B. Schier Appointed Secretary of ASME

O. B. Schier, II, has been appointed secretary of The American Society of Mechanical Engineers it has been announced by James N. Landis, 1958 president of the 50,000-member group. Mr. Schier, who was designated secretary-elect last June succeeds Clarence E. Davies who was secretary of ASME for twenty-three years.

Mr. Schier has been a member of the Society since 1932 and a member of the ASME staff for the past eleven years. He was elected assistant secretary in 1953 and named deputy secretary last December. A graduate of Lehigh University, he holds mechanical engineering and master's degrees from that institution.

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Du Pont Announces Annual Grants To Schools for Next Academic Year

Grants totaling nearly $1,150,000 have been awarded to 135 universities and colleges in Du Pont's annual program of aid to education, the company has announced. The total for the next academic year is about $100,000 more than Du Pont contributed for this school year.

Most of the increase and more than half of the entire program are grants to colleges and universities for strengthening the education of scientists and engineers. These grants will support the teaching of science and mathematics as well as other subjects. At the same time, grants for fundamental research are being continued, as are grants for fellowships, which once made up the entire plan. Du Pont's program dates from 1918.

About 300 Technical Meetings Set For ASTM Committee Week, Feb. 10-14

Problems on engineering materials for our missile and other defense programs, for research, for industry, and for better living, will be studied at about 300 technical committee meetings during the American Society for Testing Materials Committee Week at the Hotel Statler, St. Louis, Mo., February 10-14. Supplementing the work of the technical committees will be addresses by prominent industry and government leaders, relating to the work of the Society and industry.

N. P. Veeder, president of the Granite City Steel Co., Granite City, Ill., will speak at the Steel Industry Luncheon sponsored by ASTM Committee A-1 on Steel, Tuesday noon, February 11.

Carroll A. Hochwalt, vice president and director of research, Monsanto Chemical Co., St. Louis, Mo., will speak at the Chemical Industry Luncheon to be held on Wednesday noon, February 12.

William M. Holaday, U. S. director of guided missiles, will be the guest of honor and speaker at a dinner on Wednesday, February 12. He is expected to speak on matters of concern to the defense program.

John G. Duba Named Assistant Mayor for the City of Chicago

John G. Duba, a member of NSPE, was recently named assistant mayor for the City of Chicago. Formerly assistant public works commissioner, he took over his new post January 1.

His appointment by Mayor Daley was unanimously approved by the City Council.

Mr. Duba, who will be known as "Deputy Mayor," will supervise the administrative managements of all city departments, boards, commissions, and other city agencies.

Mayor Daley, in submitting the nomination, said:

"Duba's professional training, academic background, and his experience in administration and engineering, highly qualify him for this post.

"The city is carrying on one of the most far-flung public works and physical programs in its history. These programs involve nearly every department and activity of local government.

"Duba's administrative and engineering experience in this work will be of great value to all the department heads."

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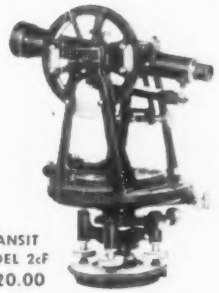

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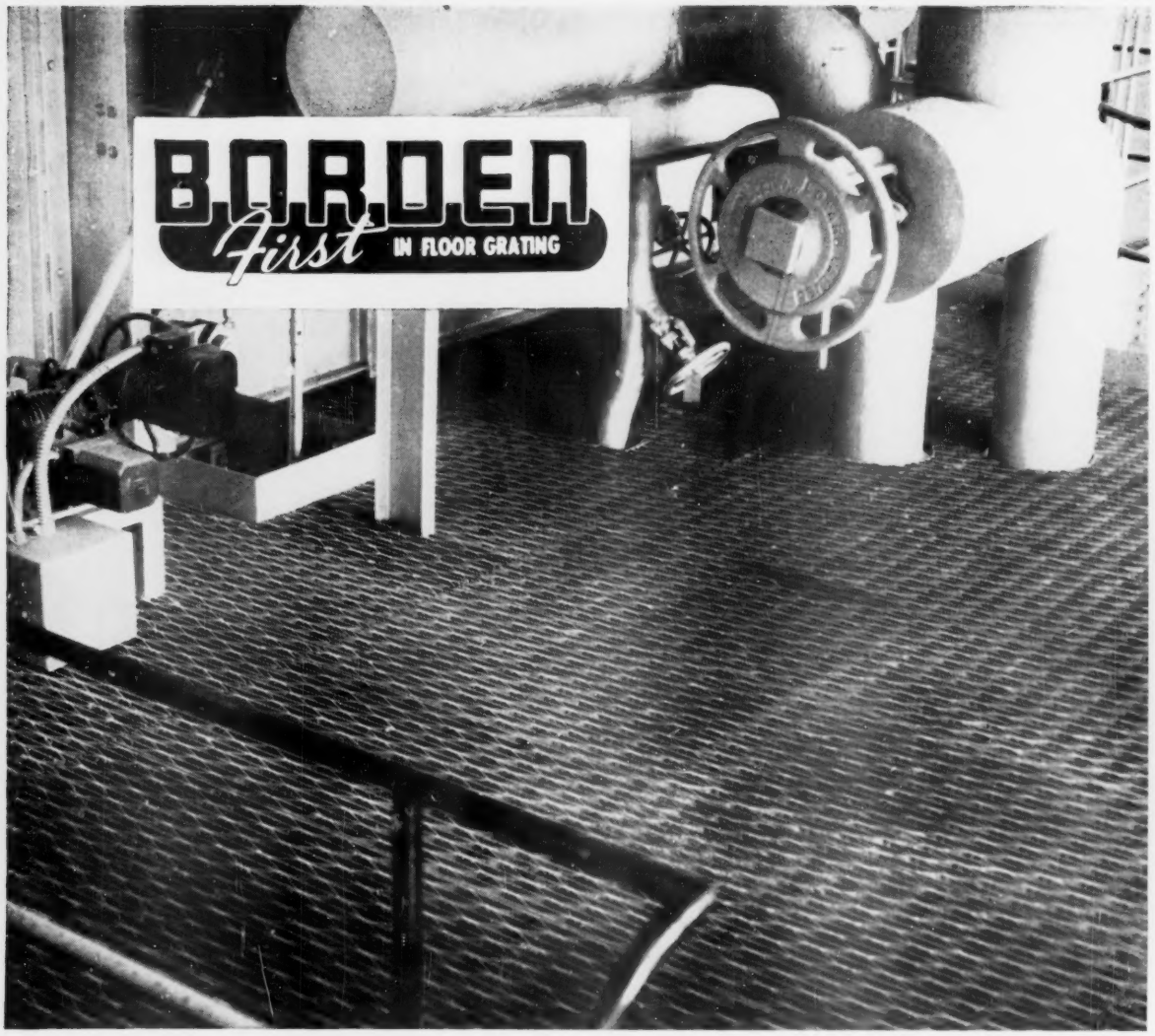

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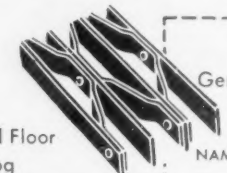

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American Engineer

The Magazine of the Registered Professional Engineer

VOLUME TWENTY-EIGHT NUMBER 2

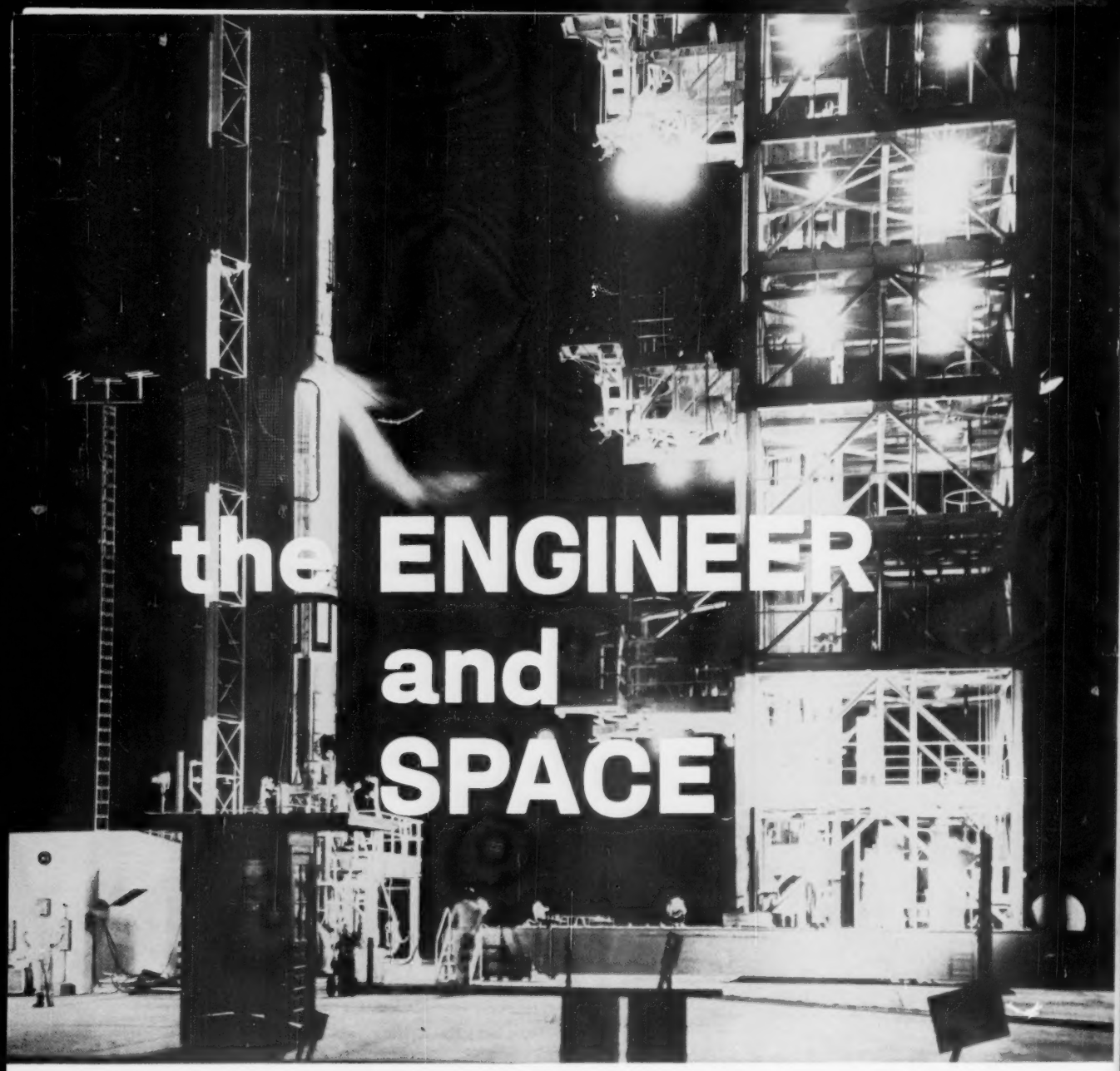
THE WHITE HOUSE
WASHINGTON

NATIONAL ENGINEERS' WEEK

National Engineers' Week calls attention to the work of our engineers, especially their vital role in the success of the International Geophysical Year. By this great cooperative effort to extend man's horizons and to increase his knowledge of the world, our young people are inspired to choose the discipline of the engineering profession and render important service to our nation and the building of peace.

Dwight D. Eisenhower

Carvin H. Dyer, P.E., President
National Society of Professional Engineers
2029 K Street, N. W.
Washington 6, D. C.



the ENGINEER and SPACE

For years, men of vision have looked wistfully at the star-filled skies and planned and dreamed of the day when they could leave the earth and voyage to the moon and to the planets in our solar system. But only now have such dreams come within the realm of possibility—and only because of engineering progress.

As engineering moves into the space era, the profession faces a variety of challenges. For answers to some of the problems already thrust upon the engineering profession, the AMERICAN ENGINEER has put ten questions before a panel of leading figures in engineering, political, educational, and military fields. Here are some of the answers to these vital questions. . .

1. Will engineers play a major role in man's efforts to move out into the solar system and beyond?

Dr. S. F. Singer, University of Maryland physicist widely known for his theoretical work in upper atmosphere research:

"Engineers will undoubtedly play a major role in space flight, as indeed they are doing now in the rocket and missile field. This will require engineers of all types but with emphasis on men who are equipped to solve new and unusual problems."

Major General Emerson C. Itschner, chief, U. S. Army Corps of Engineers:

"I feel certain that engineers will play a major role in man's efforts to conquer outer space. Scientists, as differentiated from engineers, are primarily concerned with derivation of basic theory pertaining to natural laws of the universe. Practical applications of this basic theory to the design, construction, operation, and control of space flight systems are jobs primarily for engineers."

Cherry L. Emerson, former vice president and dean of engineering at Georgia Institute of Technology:

"Any space travel will require a vehicle and since, for the past one hundred years or more practically all vehicles have been designed by engineers, it is to be anticipated the engineer will be given a major responsibility for space travel. The scientists, of course, will have to solve many problems before the engineers can complete their designs. A few of these will be to determine the effect of cosmic rays, meteors, weightlessness, etc."

U. S. Senator Charles E. Potter, Michigan:

"Unquestionably engineers are vital to man's penetration of outer space. It is my sincere hope, therefore, that this nation's efforts to stimulate interest in basic science will be directed likewise to the field of engineering, where our need for a continuing supply of professionally qualified people is also growing. I have urged this at every opportunity."

Norman V. Petersen, Lockheed engineer, and member of the board of directors of The American Astronautical Society:

"Development of manned or unmanned earth satellites, and escape vehicles for exploration of the solar system, and beyond, can only be accomplished through the employment of the technical talents of the engineering groups now contributing to the field of astronautics. Preliminary design concepts, and fabrication and flight evaluation of the complex, high performance space vehicles needed for these flight missions will, to a great extent, stem from the current engineering efforts in the ballistic missile programs."

Charles N. Kimball, president, Midwest Research Institute, Kansas City, Missouri:

"Man's efforts to move out into the solar system would come to an abrupt halt without engineers of the type we have today and those who will evolve in the future."

II. Is present American engineering knowledge and skill adequate to provide us with the necessary equipment and techniques for the development of successful projects in the exploration of outer space?

George S. Trimble, Jr., vice president, engineering, Glenn L. Martin Company:

"Yes, completely adequate. The only thing we need is the desire and good management."

Dr. Singer:

"Much augmentation is needed before present engineering knowledge can reach a level adequate to develop successful projects. Much more reliance would have to be placed on basic research to provide guidelines for answering questions which are now only being asked."

Dr. Wernher von Braun, director of development operations, Army Ballistic Missile Agency, Huntsville, Alabama:

"We have the knowledge and skill to develop and fabricate the equipment necessary for the initial ventures into outer space. We do not yet have a coordinated space program dealing with all aspects: biological, medical, etc. For more advanced undertakings, however, the technology does not yet exist—primarily because no one agency has been given the authority and the necessary resources."

Major General Itschner:

"I believe that present American engineering knowledge and skill is not adequate for the successful exploration of outer space. Much remains to be done both in research and development. There is no reason to believe, however, that the problems inherent in space exploration will be insurmountable. The American engineer, coupled with American scientific research and industry, has a long record of accomplishing the seeming impossible. The last few years are particularly noteworthy in this respect. I am quite confident, therefore, that the American engineer will develop the associated knowledge and skill and provide us with the equipment and techniques required for outer space exploration."

Mr. Emerson:

"The words 'outer space' are exceedingly broad. Just outside the solar system there are stars thousands of light years away. Any travel to such distances would require sending out one generation and getting back the second or third. When we remember that light travels at the velocity of 186,000 miles per second, these distances are appalling. Perhaps we might limit our present ambitions to the moon which is a mere 250,000 miles away. Aside from some of the scientific questions mentioned above, we have sufficient engineering ability to visit the moon with a fair chance of survival. The main requisites are time and money. It is doubtful whether, with our other needs, such an undertaking is worthwhile. Of course, man's curiosity is insatiable."

U. S. Senator Alexander Wiley, Wisconsin:

"Certainly knowledge and skills in engineering, as well as other fields, will have to be expanded and adapted to the needs of space exploration."

III. Do you feel America has enough engineers, in purely quantitative terms, to keep pace with the technological progress in outer space programs now being made by any other major world power?

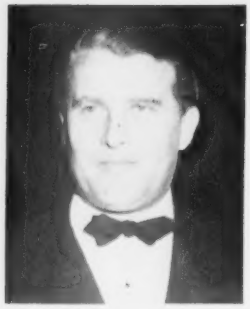
Allen B. DuMont, chairman of the board, Allen B. DuMont Laboratories:

The Navy's Vanguard rocket leaves its launching pad at the missile test center at Cape Canaveral, Florida. Vanguard is part of the U.S. participation in the International Geophysical Year Program.

Norman V. Petersen

Sen. Alexander Wiley

Robert E. Wilson



Dr. W. von Braun

Cherry L. Emerso

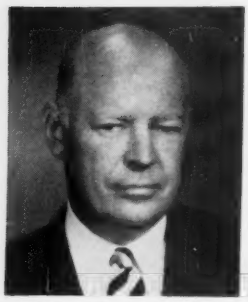
Charles N. Kimball

Maj. Gen. E. C. Itschner

Sen. Henry M. Jackson

Sen. Charles E. Potter

Dr. S. F. Singe



Allen B. DuMont

George S. Trimble Jr.

Read what these twelve American leaders have to say about the Engineer and Space

"Despite all that has been said, I believe we have enough engineers to do all that must be done—and more. However, I think we are not utilizing the engineering manpower that we have. Consider that about ninety percent of the engineering work for the military is being done by about ten companies. Thousands of capable scientists and engineers in smaller companies are not being used on the vitally important military and space projects. The weapons systems concept of military procurement puts the bulk of participation in advanced programs in the hands of a few companies and a relatively few engineers. There is, as a result, prodigious waste of engineering talent. I would guess that less than five per cent of engineers in this country are engaged in government and military programs."

Major General Itschner:

"There can be no positive statement that there are 'enough' or 'not enough' engineers. I am sure the United States will meet the challenge of the 'space age' with the engineering talent available, at the same time taking every possible action to develop the maximum reservoir of engineering knowledge and skill."

Mr. Kimball:

"The problem today, as it always has been, does not reside in the overall quantity of engineering. There is a deficiency in the number of truly creative engineers and in the ways in which they are utilized."

Mr. Petersen:

"Yes—I believe that we have adequate numbers of engineers, though attention should be given to eliminating duplication of research and development programs. A concerted effort should also be given to broader dissemination of technical literature, and the presentation of technical abstracts and translated foreign literature in all fields of science."

Robert E. Wilson, chairman of the board, Standard Oil Company of Indiana:

"Yes. Working on space problems certainly should not take any large proportion of our qualified engineers."

Senator Wiley:

"We will, indeed, need more and more engineers. The reasons are obvious. We have a growing population. Outer-space is opening as a new frontier. We are faced with a tremendous Soviet challenge in technology."

Mr. Emerson:

"Since we know so little about what progress Russia has made toward space travel, it is manifestly impossible to determine whether we can keep pace with them. As a nation we are temperamentally unfitted for espionage. Again our own progress will not be solely determined by the quantity of engineers we have, but by the superlative quality of a few."

Dr. Singer:

"I do not think that America has enough engineers of sufficient background to keep pace in the outer space programs; it is therefore essential that such training be provided."

Mr. Trimble:

"It would be my estimate that America does have sufficient engineers in quantitative terms to keep pace with other major world powers, but, unfortunately, they have not spent sufficient time becoming familiar with the peculiarities of astronautics because of a dearth of projects."

IV. Do you think that present engineering school programs will be sufficient to equip students for engineering careers in the so-called "space era," or do you expect a change of emphasis in future engineering education, such as more stress on higher mathematics, and more theoretical courses in the physical sciences?

Senator Potter:

"I definitely advocate more stress on higher mathematics and theoretical courses in the physical sciences."

Mr. Wilson:

"I do not think the so-called 'space era' of itself would justify any particular change in emphasis, though in combination with other things the emphasis will probably greatly change in the future, as it has in the past."

Mr. Petersen:

"Present engineering school programs will be insufficient to adequately equip students for engineering careers in the so-called 'space era' future. Although the astronautical sciences have been established as a clearly defined, broad field of endeavor by the scientists, engineers and technicians in industry, the military and governmental agencies, the motivation on the part of the academic or educational levels to establish a specific curriculum in astronautical engineering has been lacking to a large degree. This is not to say that our universities are not contributing, but that their efforts have only grazed the surface of need in this area. Our entire scientific educational program in the United States requires continued modernization."

Dr. Singer:

"I definitely favor a change of emphasis in the engineering curriculum with more stress on higher mathematics, on basic courses in the physical sciences, and on modern physics, including nuclear physics and astrophysics."

Mr. Emerson:

"Personally I feel that the so-called 'space era' will have little impact on our engineering schools. First, what we are living in is a scientific era and not a space era. We have just entered it, and may remain in it longer than we did in the machine age. The quality of our engineering education, on the average, is deteriorating and this presents a great danger. Students now enter college more poorly prepared. The faculties of most colleges are deteriorating as the best brains are syphoned off by industry. The economic squeeze is making it continually more difficult for colleges to operate. Graduate instruction becomes more expensive yearly. The public wishes to increase by fifty per cent the enrollment in engineering colleges which will be suicidal. It will result in turning out too many half-baked graduates whose only real assets are the diplomas clutched in their hands. Our education has no discipline. We will have, however, for either we will discipline ourselves or the Russians will do it for us."

Mr. Kimball:

"There will have to be some radical changes in engineering curricula, with the obvious need for more advanced mathematics and other theoretical courses. I believe there will be less emphasis on 'how to do it' lab type courses, than on 'why to do it' theoretical courses. Engineering curricula should also include better courses in economics, technical writing, and should also provide some knowledge of cost accounting."

V. What aid, if any, should the Federal Government extend to educational institutions engaged in graduate or undergraduate engineering training in view of the national defense aspects of the current competition in outer space technology?

U. S. Senator Henry M. Jackson, Washington:

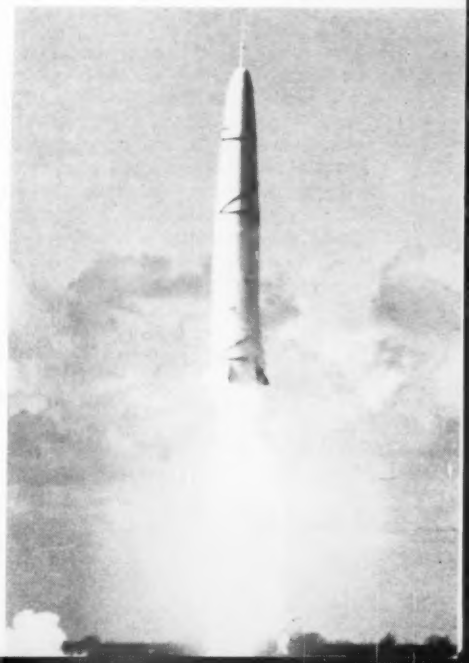
"There are a number of ways in which Government can help to increase training of personnel in critical disciplines. One method I would like to emphasize is the granting of scholarships and fellowships. As a catalytic program to induce broader national scholarship programs throughout the NATO Community, I proposed in October, 1957, to the NATO Parliamentarians' Conference that NATO sponsor an undergraduate and graduate scholarship program designed to produce annually at least 500 doctoral degree holders in the fields of maximum importance for the defense and economic well being of the NATO Community in such fields as applied mathematics, aero and fluid dynamics, basic electronics, nuclear physics, solid state physics, physical chemistry and metallurgy. Atlantic Community fellows could be selected through a NATO-wide competition patterned after the Rhodes Scholarship plan. Regional nominating boards might be established in each country, and final awards would be made by a NATO-wide group. This proposal was unanimously approved by the NATO Parliamentarians' Conference and was referred by the NATO Heads of State meeting in December to the new Science Committee of NATO, which was asked to recommend action."

Dr. Singer:

"One of the major aids to graduate training comes from Government support of university research since this gives students a modest means of sup-

Rising on a column of fire, an Air Force Atlas intercontinental ballistic missile gets underway in a major firing test at Cape Canaveral.

Another Air Force missile, the Thor, makes a successful firing test. Under development by the Air Force and Douglas Aircraft, the Thor is an intermediate range ballistic missile.



port (as graduate research assistants) as well as a means of writing a thesis. Therefore, I favor a much expanded Government support program for university research, particularly in the field of upper atmosphere and interplanetary physics and rockets."

Mr. Kimball:

"The Federal Government could best extend aid to engineering education in the form of grants for the establishment of professorial 'chairs' rather than by additional support of research programs. The emphasis should be placed on education."

Senator Potter:

"The traditional policy of the Federal Government, and especially of the present Administration, has been to extend aid only where local and state organizations cannot successfully fulfill their objectives. The people of the United States have demonstrated their support for this concept. However, the grass roots momentum needed to produce heavier emphasis on scientific and engineering talent may take years to achieve its goal. Therefore, Federal help will be needed in this area. The amount in dollars and cents will depend, in the end, on what Congress approves, and it is too early to predict what the sum will be."

Dr. von Braun:

"The Government's role in the stimulation of scientific and technical education should be that of 'pump priming' when an urgent need exists, as it certainly does now. The program recently announced by the Administration is a step in this direction. Public education to meet tomorrow's demands, however, is the concern of every citizen and of every level of Government."

Major General Itschner:

"We are on record as strongly supporting a program of Federal financial assistance to increase the number of persons in the United States trained in engineering and scientific fields. We especially favor a provision in such legislation that students receiving direct assistance agree to spend, after graduation, one year in the service of the Federal Government for each year of assistance they receive during their college course."

Pilot in high-altitude flight suit stands beside the sidewinder missile. But as one panelist says, for more advanced undertakings the technology does not now exist.

Enemy jets must be prepared to cope with these two Falcon missiles. One uses radar guidance, and the other finds its target by an infrared-seeking guidance system.

Senator Wiley:

"The Federal Government should examine ways to provide additional aid for education. We need, of course, a balanced program of: increased funds for fellowships, support for faculty members, and expanded facilities for teaching and training students in engineering and science. Ordinarily, this is a state, local, and individual responsibility. However, faced with a national challenge, I feel the Federal Government should aid wherever necessary. We must avert, of course, the danger of Federal control of education."

VI. Many leading figures in education, industry, and government have been expressing serious concern over the problem of stimulating a greater interest in elementary math and the physical sciences among our high school students. What do you think might be done to help generate this increasingly necessary interest on the part of our young people?

Mr. Emerson:

"This one is comparatively simple. Make mathematics and science courses compulsory instead of optional. Spend whatever is necessary to provide teachers. As one little practical matter, allow graduates of engineering colleges to teach such courses in high school without the silly requirement of spending a year taking courses in how to teach in order to achieve a teaching certificate. Of course, incentives should be provided to persuade the bachelor's man to teach in high school rather than accept a job in industry."

Mr. Petersen:

"I believe that one approach might be to encourage the participation of engineers, scientists and technicians now in industry in a national program of seminars and technical lectures on the high school level. Industrial organizations now provide this technical representation for presentations to professional societies and academic organizations. However, this effort should be expanded to encompass the high school level to stimulate the vast potential of future engineers and scientists. Perhaps the burden of providing this service or 'educational-interest stimulant' should be borne jointly by industry, the Federal Government, and in part by the graduate engineer and scientist. Every graduate, upon leaving his alma mater, should personally shoulder a part of the continued responsibility of this educational program.

Dr. von Braun:

"We must interest youth in basic knowledge at the earliest practicable age; certainly in elementary schools. To bring this about will require united effort on the part of parents, school boards, school administrators and teachers. Better salaries, improved professional position, more adequate facilities for classroom teachers are urgently needed if we are to get the kind of guidance and inspiration our children need. I do not believe the Federal Government can or should dictate such a program; it should assist but the people must insist upon it and accept whatever is their just measure of responsibility for its execution."

Senator Jackson:

"I share the view that a root cure of the trained manpower problem lies

A Nike guided missile on its launcher is elevated to a vertical firing position. The launching site is located near Lorton, Virginia.

in attracting more qualified students into mathematics and science at the high school level. One important way of achieving this is through raising the quality of teaching. In order to increase the incentive for effort by both teachers and students I recommended in October, 1957, to the NATO Parliamentarians' Conference that NATO sponsor an annual competition, which would give monetary awards to outstanding students, together with their instructors. For example: An annual mathematics competition would be established. Students of a designated age level would take national examinations of uniform difficulty. Those scoring highest nationally would then be eligible to compete for grand prizes in a NATO-wide contest. Five thousand prizes of $300 each would be provided, together with perhaps one hundred grand prizes of $1000 each for the over-all NATO competition. Each prize would be divided between the student and his teacher, with perhaps one half going to the teacher or possibly to the school. The total cost of such a program would approximate $1,600,000 annually. This NATO-wide mathematics awards program is considered a minimal one. It is hoped that each of the fifteen members of NATO would follow through with its own program of awards."

A Nike-Cajon missile points its slim nose into the bright New Mexico sky just before a firing test at White Sands.

Major General Itschner:

"I believe much has already been accomplished in this era since the rapidly developing events of the past few months have focused attention so dramatically on this problem. Since this is a basic element of the total problem, it is essential that continued concentrated effort be applied to emphasize the importance of this point. Specifically, we must take advantage of the intense competitive spirit of American youth and encourage the establishment by private capital of recognized national awards for superior achievements in mathematics and the physical sciences among our high school students. There should be three or four degrees of awards, with the lowest degree in such number as to make it attainable by an average of one or two students in each school, and the highest a rare honor achieved by not over twenty-five students in the United States. If we can make the attainment of such an award as great an honor as being selected for an all-state football team our problem of popularizing mathematics and physical sciences will be solved."

Dr. Singer:

"Much work has to be done to improve the quality of mathematics and science teaching in high schools. One way to accomplish this is by greater incentive to the students in terms of college scholarships or, more drastically, by making it difficult for students to get into college at all unless they have a certain proficiency in mathematics and basic science. In my opinion these subjects should be included in the basic skills, like reading and spelling."

Mr. Trimble:

"There has been much verbalization of the difficulty of stimulating interest in mathematics and the physical sciences among our high school students. My personal opinion is that this is not the real problem. The problem is in stimulating a greater interest in mathematics and physical sciences amongst the people who determine and teach the school curriculum. Since when did our schools teach only what the students are interested in?"

VII. The impact of research, development, and production in space rockets and allied equipment has already been felt in a broad segment of American industry. As industry moves into these new areas, will engineers be given a larger role in the management function? Have you noted a trend toward such a larger role for engineers in your own field?

Mr. Petersen:

"Yes, I believe that engineers will be given an increased role in the management function of new industrial organizations coming into the research and development and production of space vehicles and support equipment. However, effort should be given to assuring such management practices utilizing the engineer's technical background. Some existing R & D industrial facilities now provide parallel growth of both technical, personnel and business administrators. Comparable remuneration and stature within the company organization is given to these diversely experienced groups."

Mr. Emerson:

"There has been a continuous trend toward an increase in the number of executives who have come up in industry through engineering. Personally, I doubt if a greater expansion of this trend is desirable. The engineer should become more scientific and the scientific mind is not usually the best type for an industrial executive."

Mr. Trimble:

"Engineers have been playing a larger role in the management of industry for some time now. This trend will undoubtedly continue in those industries concerned with problems of a technological nature."

Dr. Singer:

"I think the trend will be to replace the pure administrator by a man who has technical ability as well as ability to administrate."

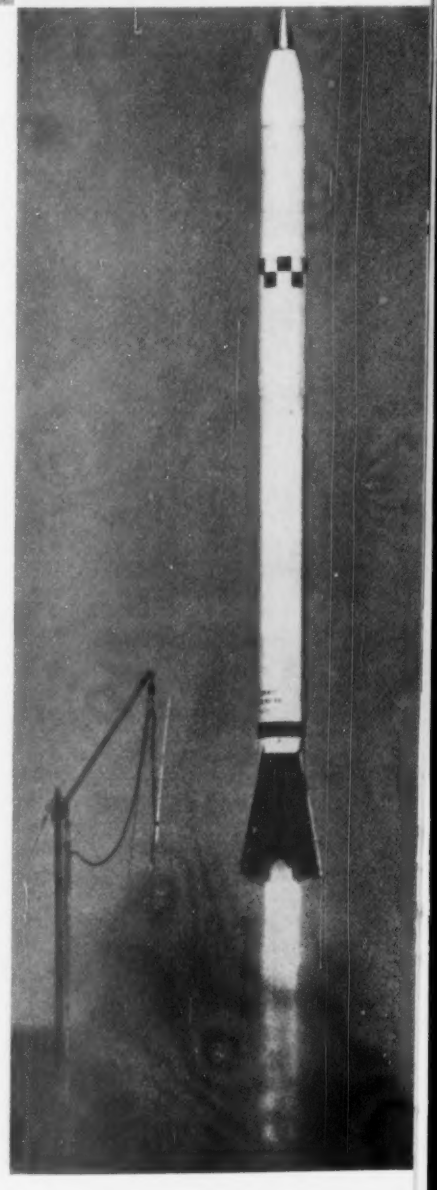
Major General Itschner:

"Every private industry survey or study on the number of engineers occupying executive type positions that has come to my attention concludes

U. S. rocket researchers take to the sea to learn about cosmic radiation and high altitude temperatures in the vicinity of the North geomagnetic pole.

Right, the Air Force's Northrop Snark long range strategic missile streaks above the missile test center at Patrick Air Force Base, Florida.

Below, the Army's surface-to-surface guided missile known as The Corporal blasts off at the White Sands Proving Ground in New Mexico.



that the percentage of engineers in such positions has constantly been increasing. This may be due to two basic causes: One is that the growth of technology in all phases of our economy has created an unprecedented demand for engineers as technologists which in turn creates a demand for engineers capable of managing or directing the activities of those technicians. The second—and of course related reason—is that the basic training and early experience of an engineer ably fits him for becoming adept in executive positions."

VIII. Could engineer manpower utilization for the "space era" be improved by approaches to engineering problems in design and planning that would give greater consideration to the use of consulting engineers in private practice?

Dr. Singer:

"I definitely feel that consulting engineers are of great value to industry and to our over-all defense effort. This is so because they have a chance to become experts in certain fields and can keep up on an industry-wide and interservice-wide basis. Thereby, they can often suggest approaches which have been tried by other projects and have been found successful."

Mr. Trimble:

"I rather doubt that extensive use of consulting engineers in private practice will do much to improve manpower utilization on the huge projects that will be associated with the 'space era.'"

Mr. Emerson:

"The vehicles for the space era will be provided by industry. Basically industry will use its own employed engineers. However, an executive would probably be wise to consider bringing in consulting groups at intervals and allowing them to fight it out with the employees to determine which group is the best designer. This will be tough on the executive as referee, but what the scientific era needs is to locate the best brains regardless of where they are employed, or who suffers."

IX. A professor at the Harvard School of Business has urged that the job of defense research and development be removed from the Department of Defense and placed in the hands of a civilian agency similar to the Office of Scientific Research and Development of World War II. Do you think such an agency could better cope with the complexity of defense needs in space rocketry and satellites?

Major General Itschner:

"The job of defense research and development may be separated from the defense department and operated more effectively as a civilian agency, though the close association or liaison must still be maintained. Perhaps both defense needs and the need for development of commercial aspects of astronautics would be better satisfied. Although this new agency would provide mutual benefits to all three of the existing defense arms, the Army, Navy and Air Force with respect to advanced projects in the field of space rocketry and satellites, this would not necessarily resolve all current problems now existing in the U. S. Defense Department. I believe the existent three services now have clear-cut mis-

sions as specified defense responsibilities. The three service's capabilities have been outgrowths of the development of the natural environments, land, sea, and air, and resultant machines and techniques designed to function best within these environments. It is now time to recognize the existence of new environmental areas and the complex, high performance vehicles subject to this environment and to define the mission for a fourth defense arm—the U. S. Space Force. Current rivalries must be eliminated, and this can best be allowed by definition of purpose and scope for this new service, the U.S.S.F. Initial staffing can be accomplished by utilizing the talents of those now in the Army, Navy and Air Force indicating strong interests in the area of space operations. This is not to say that the three existing services would not have defense operations involving ballistic vehicles, but that the major use of these vehicles, plus the manned and unmanned operations of satellites and space vehicles would be concentrated in the U.S.S.F."

Senator Wiley:

"The needs of defense cannot be disassociated from a forward-moving science program, and vice versa. The fact is, we need a healthy admixture of scientific and military thinking—unfettered, of course, by obsolete ideas in both fields. This means a pooling of the best scientific and military brains to equip us with a space age defense."

Senator Potter:

"Yes, I do. I have proposed to President Eisenhower that a Scientific Progress Agency be established, and that the agency head should hold Cabinet rank and sit in the National Security Council."

Dr. Singer:

"While the suggestion to put all defense research and development into the hands of a civilian agency may sound like an ideal way to overcome interservice rivalries, multiple procurement, competing programs, etc., it is hard to say whether such an approach will work out in practice at the present time. It may perhaps be applied to projects which have not yet been undertaken by the various military services.

Mr. DuMont:

"I don't want to comment on the organization of the Defense Department or of national defense research. However, I do recall that in World War II the Manhattan project had a vital job to do and that it accomplished the almost impossible in a minimum amount of time. If someone in that project wanted something, they would come in in the morning to our plant and we would have a signed contract in the afternoon. Today's red tape takes two years of negotiation and run-around before a company has a signed piece of paper."

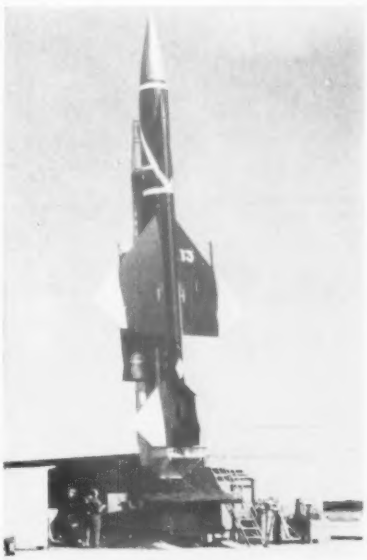
Mr. Wilson:

"Such a move would have certain advantages and certain very real disadvantages in slower integration with the other plans and programs of the military departments. I think such a change would be unwise at this time."

Dr. von Braun:

"I believe we should not attempt, at this late date, to change the management of existing missile projects. They should remain in the hands of the armed services responsible for them. As I stated before the Senate Preparedness Subcommittee, however, it is my belief that we need a National Space Agency to carry on forward-looking research and development programs not directly related to weaponry. In other words, we should not limit our efforts to the known military requirements. This simply slows down our progress, and we cannot afford delay."

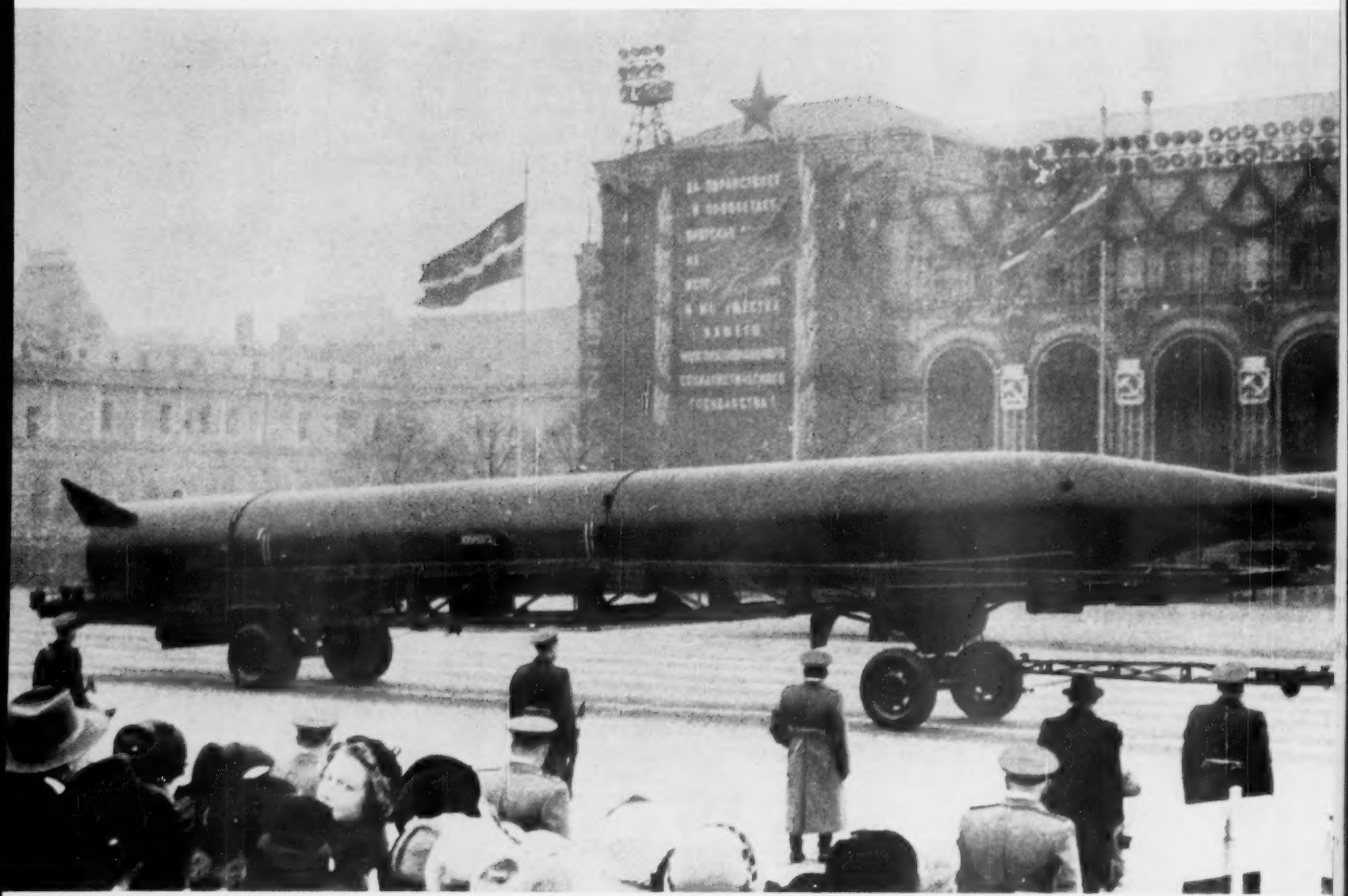
Ready and positioned for firing is this Air Force Boeing Bomarc interceptor missile. One of the missile's two ram jet engines is visible at the lower right.



cessive secrecy between companies,

The sleek looking rockets above, which some experts speculated might be two stage tactical weapons, went on parade recently in Moscow.

Below, a giant Russian rocket is pulled past the reviewing stand in the November 7th parade on the anniversary of the Bolshevik Revolution.



Husky battlefield rocket launchers are drawn through a smoky Red Square in Moscow. The launchers, which appear tractor-treaded in design and carry rockets inside, were part of a vast display of Soviet rocket power.

X. There seems to be widespread agreement that the U. S. is lagging behind Russia in some phases of heavy rocket development. What do you feel are the chief causal factors in this deficiency?

Mr. Trimble:

"If the U. S. is lagging behind Russia in some phases of heavy rocket development, the major reason must be that we didn't start soon enough. You cannot buy time with money. The only way to get a rocket sooner is to order it sooner. Our country did not have the vision to foresee the need for rockets as soon as some other countries did."

Mr. Emerson:

"Our system of education is in general partially to blame. More specifically, too many of our ablest scientists and engineers have devoted their time to the gadgets which make for comfortable living. During the last ten years, industry has produced 94 million radios, 50 million television sets, 32 million electric shavers, 42 million refrigerators, 38 million washing machines, together with other millions of electric toasters, vacuum cleaners, air conditioners, home freezers, etc., etc., plus 54 million automobiles. All of these have added to our comfort and raised our standard of living. In fact, we have become as a people weighted down with luxury and have become flabby, careless, and lazy. We are somewhat like the ancient Romans in the fifth century A.D. who had achieved a high standard of civilization just before they were destroyed by the Goths and Huns from Northeastern Europe. The additional reason for our deficiency is the rivalry between the armed services. The failure of the Navy Vanguard was received with muffled cheers by the Army and the Air Force."

Mr. Petersen:

"Yes, there appears to be widespread agreement that the U. S. is lagging behind the U. S. S. R. in the ballistic missile area. Perhaps a contributing factor is simply the inability to establish the ballistic missile program at the close of World War II. This delay of five or six years is difficult to overcome. The launching of Sputnik I and II is now serving to be a very useful yardstick, and dedication of effort by the U. S. can improve our defense capabilities."

Mr. DuMont:

"Any lag by the United States must to some degree be blamed on administrative red tape, the poor utilization of existing scientific personnel and engineering establishments, and to excessive secrecy between companies, scientists, and the services themselves."

Dr. Singer:

"The United States does lag behind Russia in some phases of heavy rocket development, but one cause certainly is the fact that this field really has not received any emphasis in this country until fairly recently. It remains to be seen whether development of even larger rockets will go ahead without any clear justification for their use. For this reason I would suggest again that exploratory work be done on all phases of propulsion which may be of future interest. Such basic research can best be done on a partnership basis between university groups and industrial laboratories."

Senator Wiley:

"A few, of several, basic reasons for Russian advancement in the rocket-missile field are:

1) An early decision to gamble on rocket-missiles as military weapons;

2) Availability of free-world information on technological and scientific development;

3) Utilization of German scientific manpower following World War II;

4) Establishment of a broad scientific-education base, with emphasis on mathematics and science.

As we know, the Soviets are ahead in some phases of the rocket-missile field. I believe their lead is not so great, however, that we cannot—by concentrated and dedicated effort—reassume our lead in the fields of science and technology. As we forge ahead, of course, we will continue to rely heavily upon the ingenuity and skills of our engineers."

Dr. von Braun:

"There has not been sufficient awareness of the full implications of the 'space concept' in some quarters; as one result, we do not yet have an engine of really large order of thrust. There is a tendency to think only in terms of specific military requirements and to ignore the much larger potentialities represented in satellites and other types of orbital vehicles. In fact, the 'Buck Rogers' label is even today being pinned upon those of us who are trying to get people to understand the real significance of outer space. An object lesson might be drawn from the Maritime Era in which Spain and Great Britain grew to greatness. Once the motto was, Who rules the seas rules the earth. Tomorrow it will be: Who controls space controls the universe. The conquest of space is essential to our survival."

Engineers' Week Informs America of Profession

By

GARVIN H. DYER, P.E.,

President, National Society of Professional Engineers

It has become a tradition over the past several years for the president of the National Society to contribute an article to the AMERICAN ENGINEER each February in connection with the observance of National Engineers' Week. The year 1958, with all its fateful implications of America's progress or lack of progress in certain phases of national defense, would seem a most appropriate year in which to carry on this still young tradition of a message

to the entire Society membership. For the purposes and objectives of National Engineers' Week have gained enormously in public recognition since our National Society began the sponsorship of this annual tribute to the engineering profession in 1951. And these same purposes and objectives have become recognized as intimately involved in our very existence as a free nation.

In the interval between the small beginnings in the promotion of the Week in 1951 and the present widely recognized observance, a large segment of the general public has been made aware of the magnitude of the contributions that science and engineering have made to our way of life today. I believe the engineering profession can take considerable satisfaction from the fact that the promotional activities of Engineers' Week on the national, state, and local chapter levels have made a very real impression on millions of Americans as to the values generated in our civilization by engineering achievements.

Today, public figures in all fields of endeavor are exhorting our citizens to give more support to the schools, to stimulate greater interest in mathematics and science, to have more appreciation for scientists and engineers, etc.—all things that we in the National Society have been urging for eight successive observances of National Engineers' Week. But while it is gratifying to see such widespread endorsement of many of our long-standing policies, the gravity of our present situation is such that we in the engineering profession cannot afford to merely sit back and make smug comments along the lines of "we told you so."

We cannot afford this because far too many engineers themselves do not realize the nature and extent of the responsibility that will be thrust upon their shoulders as man moves into the so-called space era. It would almost seem that we engineers are so immersed in the details of our work that we cannot see the broader picture that is unfolding around us as man prepares to leave the surface of the planet earth and journey out into the solar system and beyond. Although engineers have long been accustomed to the teamwork approach in solving the complex problems that underlie modern technological developments, too many of us consider our own professional growth in the same light as did engineers in the last century—a lone wolf sort of thing with only the barest support of and participation in organized professional society activity.

I believe the key to professional growth and development in the era we are now entering is to be found in the professional society, and only there. None of us could possibly have the time or facilities to accomplish as individuals what an organized society can accomplish in terms of building the framework for personal growth and development through professionalism and public service. This has been true for a number of years, and it will certainly be true in the near future as engineers participate in the exploration of our solar system, in weather control, in fusion power devices, and other such things which will have great national and even global significance.

As 1958 begins, the engineering profession has come into the glare of public attention as never before. Engineers in the military and in civil life are testifying before Congressional committees, engineering education has been scrutinized, the president of a major science and engineering school has been appointed special assistant to Mr. Eisenhower for science and technology, and the press is full of comment by all sorts of people who are suddenly "experts" on the U. S. engineering manpower situation.

Many of us, again I say too many of us, in the profession feel that all this sudden publicity is a temporary public excitement that will soon die down. It won't. In fact, the current splash of press and public interest in engineering and the sciences is going to increase in direct proportion to the accomplishments that are made in the exotic areas of space rocketry, nucleonics, space satellites, and the like. The public eye will be fastened upon us. Will we be equal to the challenges that such public interest will bring?

The reality of these challenges can be seen already in the deliberations of the Congress as the legislative branch of the Government tackles the problem of what to spend and how to spend it best in order to keep pace with technological progress behind the Iron Curtain. Some people are ready to turn over our entire educational system, from kindergarten through the universities, to the Federal Government. Others want to use Federal tax money to completely support undergraduate programs in our engineering schools.

Society President, Garvin H. Dyer, P.E.

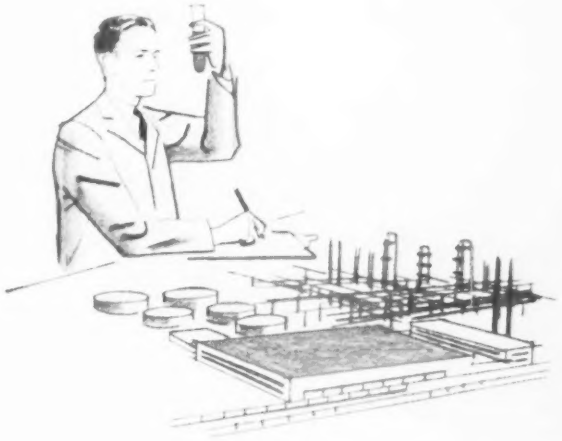
To meet this particular challenge, our National Society has formulated a policy statement which clearly and forcibly outlines the dangers of unlimited Federal subsidies for undergraduate education. This policy statement was worked out after discussion among the NSPE Board of Directors at the Bismarck meeting. It is based on the principles implicit in a series of policy statements formulated over the years by the people who have served on the board. Thus, it reflects the views of the National Society membership, as expressed through the various boards of directors. Our National Society staff in Washington is prepared to testify before Congress in behalf of this policy, and, as a matter of fact, printed matter describing the NSPE position has been widely distributed to the press and to interested groups and public officials.

Of course, Federal spending in education is only one of the many challenges now facing the engineering profession. There are the challenges of how to stimulate greater interest in math and science in the elementary and secondary school group, of helping to provide better math and science teachers in the high schools, of improving the utilization of existing engineering manpower, of generating broader industry participation in providing opportunities for career development, and a long list of other problems which can only be atacked by professional society effort. Indeed, the immense scope of the engineering contributions to such a vast enterprise as the exploration of our solar system will serve to give the role of the profession-wide engineering society even more importance than it has achieved to date.

In the National Engineers' Week observance itself we have an outstanding example of the functioning of NSPE's three-level structure in meeting the challenge of a nation-wide and profession-wide promotional activity. The theme and over-all guidance for the observance is provided by the National Society along with the basic promotional materials. The state societies and local chapters then plan and carry out the events of the Week. In this way, our Engineers' Week is quite different from most of the so-called "weeks" that fill up the calendar. Most of the latter are merely publicity schemes worked up from a central office, with no local participation whatsoever. In National Engineers' Week, we have busy professional men going out to civic groups, high schools, colleges, and a variety of local organizations. The career conference for high school students has come to be an integral part of the National Engineers' Week observance. In these conferences, the public sees qualified professional engineers visiting the schools and offering guidance and advice on the kind of educational background needed for engineering, where to apply for admittance to engineering schools, and information on what type of work engineers do in industry, private practice, government, and other fields. Over the years, career conferences have become genuine opportunities for public service on the part of engineers in many communities.

As industry expands into rocketry and space satellites, large numbers of engineers will be working together in single departments and project divisions. This situation will undoubtedly lead to an increase in the extent of the challenge of unionism to our engineering profession. Certain trade union leaders will see in these engineers a large and fertile field for the cultivation of union inspired ideas. Our young engineers going into industry will be subjected to an increasing barrage of propaganda from the unions. Those who have practiced engineering for a number of years and who have participated in professional society activity know that unionism and professionalism are incompatible. The acceptance of union organization by engineers would surely mean the end of all the gains made by the profession. An engineer could not be a striker walking a rocket firm picket line on Monday and a practicing professional on Tuesday. Have no doubts about it. The unions are well equipped to wage a long-term campaign for the organization of engineers in industry. They have handed us a challenge which we must not fail to meet.

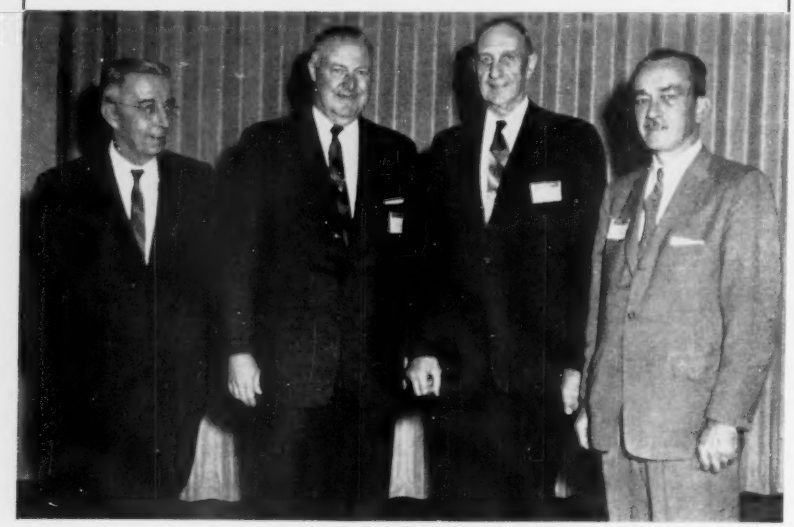
Our world today is an ever changing one. Symbols of progress can easily be found on all sides. The air terminal, for example, could be held up as symbolic of progress in modern transportation. One could hardly pass through á major air terminal today and fail to be impressed by the tremendous advances in aeronautics which have been made in only a handful of years. Many of them can look back to the day when an "airport" was little more than a muddy field with a few rickety looking vehicles with fabric wings. To get some idea of the distance we have come in less than



half a century, just consider that the first successful airplane was designed, built, and test-flown by two bicycle mechanics. Then consider what it takes to design, build, and operate the military and civil aircraft of today. On all sides, we are literally engulfed in the harvest of scientific and technical progress. The engineering profession has played a vital part in this progress. Indeed, it is no exaggeration to say that the widespread utilization of engineering knowledge and skill in the past half-century has really given birth, so to speak, to the world we see about us today.

There will be a space era, and engineers will have a large share in its dimensions. This 1958 National Engineers' Week—observed at what might well be called a turning point in America's awakening to the need for scientific and technological superiority—should be a time of rededication to the ideals of professionalism on the part of our National Society membership.—**End.**

Conference in Missouri



These four men took a prominent role at the Missouri Conference on Utilization of Engineers and Scientists. They are, l. to r.: H. O. Croft, dean, College of Engineering, University of Missouri, site of the conference; Garvin H. Dyer, NSPE president; Dr. Howard I. Bevis, chairman, President's Committee on Scientists and Engineers, and H. W. Honefenger, Missouri SPE president.

Utilization Conferences Dates Listed

The latest in a series of engineering and scientific manpower utilization conferences under the auspices of the President's Committee on Scientists and Engineers has been announced. These conferences are usually sponsored by a college or university in cooperation with the professional engineering society in that state.

The schedule of forthcoming conferences is as follows: California Institute of Technology, Los Angeles, Calif., week of February 17; Iowa State College, Des Moines, Iowa, February 26; University of Tennessee, Knoxville, Tenn., March 13-14; University of Nebraska, Omaha, Nebr., March 14-15; Purdue University, Lafayette, Ind., March 25-26; Rutgers University, New Brunswick, N. J., April 2-3; Georgia Institute of Technology, Atlanta, Ga., April 3-4.

Montana State College, Bozeman, Mont., April 14-15; Rensselaer Polytechnic Institute, Troy, N. Y., April 21-22; University of Minnesota, Minneapolis, Minn., April 25-26; Michigan State University, East Lansing, Mich., April 25-26; University of Buffalo, Buffalo, N. Y., date not set; Bradley University, Peoria, Ill., May 6-7; Drexel Institute, Philadelphia, Pa., May 13; University of Connecticut, time and place not determined.

FEBRUARY MEETINGS OF NOTE

American Institute of Electrical Engineers—Winter Meeting, February 3-7, Statler Hotel, New York, New York.

American Society for Testing Materials—National Meeting and Committee Week, February 10-14, Hotel Statler, St. Louis, Missouri.

American Institute of Mining, Metallurgical and Petroleum Engineers—Annual Meeting, February 16-20, Statler and Sheraton-McAlpin Hotels, New York, New York.

American Society of Civil Engineers—Chicago Convention, February 24-28, Hotel Sherman, Chicago, Illinois.

American Concrete Institute—Annual Convention, February 24-27, Morrison Hotel, Chicago, Illinois.

"Join us man, and you dig the coolest, this is the end, us cats are moonbound. . . ."

Society Opposes Administration's New Pay Schedule

The Administration's proposed pay schedule for classified Government employees "could prove seriously detrimental to the morale of our Federal scientists and engineers, and result in an ever higher resignation rate from Federal service," a spokesman for the National Society has stated.

Executive Director Paul H. Robbins declared that a limiting salary provision in the Administration's new schedule would, as a practical matter, "nullify" the recent Civil Service order designed to close the gap between Federal and industry-wide salaries for scientists and engineers.

In a letter to Senators and members of the House Post Office and Civil Service Committee, Mr. Robbins pointed out that President Eisenhower's recommended Federal pay schedule would "deny the full benefits of an over-all classified pay raise to those persons who have been raised to the top step of their grade as a result of the recent Civil Service order."

Mr. Robbins explained that the National Society's position was based on the belief that thousands of engineers and scientists would get no increase whatever, or only a small one under the President's new schedule. These engineers and scientists would not get the combined benefit of the proposed salary increases and the special top-of-their-grade raises authorized by the Civil Service Commission, he said.

In his letter, Mr. Robbins urged that "until a professional scientific-engineering schedule is established, the Federal Government should do all within its power to elevate the salaries of Federal scientists and engineers to a level which is more closely equal to the salaries currently being received by their counterparts in industry and other areas of employment."

Error . . .

Louis R. Howson is the president of the American Society of Civil Engineers—NOT Louis R. Warner as reported in the January issue of this magazine. The American Engineer regrets the error.

FROM WASHINGTON

BY
MILTON F. LUNCH,
N.S.P.E.'s Legislative Counsel

EDUCATION AID PROGRAM RAISES DIFFICULT QUESTIONS

IF there is anything sure about what Congress will do, a good bet for 1958 would be on the passage of legislation to stimulate and aid an improvement in the educational system of the United States. There is no doubt that the overwhelming majority of the Congressmen want to accomplish this objective, but the general unanimity of opinion ceases on the question of how to do it. In the first week of the new Congressional session several score new bills have been introduced, proposing academies of science, scholarships, tax deductions for educational expenses, enlarged allowances for private gifts to educational institutions, and many others. Almost all of these proposals are justified by the sponsors, in whole or in part, on the claim that the national defense requires more engineers and scientists.

The most significant of all the proposals, however, is one that has not been introduced at this writing. It is the

Marion B. Folsom,
Secretary of HEW

announced program of the Eisenhower Administration, an outline of which was released by the President on December 30, 1957, supplemented by the comments of the Secretary of the Department of Health, Education, and Welfare, Marion B. Folsom. The Administration bill, to be introduced as soon as final details are settled, was prepared by HEW after a long and extensive study and consultation with other Government agencies. Because it will be the focal point of Congressional deliberations on aid to education, the far-reaching suggestion deserves more than cursory review.

First, it is a temporary four-year program, with an approximate total price tag of $1 billion. There are many who feel, however, that once the door is opened it will be difficult to close it, contending experience proves that temporary Government programs have a habit of becoming permanent programs.

Second, the program is for all fields of education, not restricted to engineering and science. However, much of the language in the bill itself, and in the explanatory statements, justify it with emphasis on the need for more study in mathematics, science and engineering. President Eisenhower took special note of this point in his State of the Union speech and Budget message, stating that the plan is designed to avoid "undue stress on the physical sciences at the expense of other branches of learning." And, further, "The national needs require the development through a strong general educational system of a vast number of aptitudes and skills."

Finally, a basic principle in the plan is an attempt, in the words of the President, "to insure against any possible domination by the Federal Government of our educational system, which must continue to be locally controlled and operated in accordance with our American tradition."

As outlined by Secretary Folsom, the plan contains the following features under four general headings:

1. *To Reduce the Waste of Talent*

A. Grants to the states, on a 50-50 matching basis, for testing the abilities and aptitudes of students, starting as early as the seventh grade.

B. Matching grants to the states to improve counseling and guidance of young students. Funds could be used to train personnel, to pay salaries of administrative and supervisory personnel in guidance work, or to employ additional counselors.

C. Approximately 10,000 four-year Federal scholarships per year, to be allocated among the states on a population basis, to be awarded on the basis of need by state scholarship commissions. The scholarships would be available in all fields of study, "but preference would be given to students with good preparation in science and mathematics, thus assuring that many would pursue science and engineering courses in college."

Students in private schools would be covered in the above programs.

2. *To Expand and Improve the Teaching of Science and Mathematics*

A. Matching funds to the states which could be

(Please turn the page)

used in a variety of ways—employ additional qualified science and mathematics teachers, provide laboratory equipment and instructional materials, or to increase the pay of qualified science and mathematics teachers. The last-mentioned use raises an obviously touchy point by restricting the salary increases to science and mathematics teachers. The most likely result, it is felt, is that the states would not use the money for salary increases unless it could provide equal increases from other funds to teachers of all other subjects.

B. Matching funds would also be made available to strengthen state departments of education in the science and mathematics field. It is pointed out by Secretary Folsom that all the states now have special units and programs to promote the teaching of home economics, agriculture and distributive trades. But only eight states have special directors or units to foster and improve science and mathematics teaching. Thus, the funds could be used to expand or establish similar programs and organizations for science and mathematics.

3. *College and University Teachers*

A. To obtain more and better college teachers, the program calls for 1,000 graduate level fellowships the first year, and 1,500 a year for each of the following three years. The fellowships would be for all fields of study and would be awarded on the basis of recommendations by colleges and universities. The recipient would not be bound to go into teaching, but the hope is that many would select a teaching career after a prolonged exposure to the academic life. The fellowships, which would have to be for Ph.D degrees, would provide $2,000 a year, plus $400 per dependent (maximum of three). This program is supplemental to the National Science Foundation fellowships which would continue on an expanded basis.

B. Graduate schools could receive direct Federal grants of up to $125,000 a year to help meet the cost of expanding their capacity. The school itself, not the state, would match the Federal grant. These funds could be used for salaries, library materials, or equipment.

4. *Foreign Languages*

Funds would be used to help establish and operate training centers in language under the auspices of educational institutions to train teachers, Government personnel and others. Federal financial assistance would also be available for the establishment and operation of summer institutes and other sessions at which teachers of foreign languages could receive training in improved teaching methods.

This is the outline of the Administration plan, with many of the details yet to be filled in. Administration personnel responsible for its development are a bit unhappy over the press emphasis on the controversial undergraduate scholarship feature. They point out that the scholarships represent only a small part of the funds to be expended, approximately $7.5 million out of $225 million for the first year. (The scholarships would approximate an average of $750 each.)

The authors of the program have tried to tailor it to avoid or overcome the highly-charged emotional issues of Federal domination of education, church-state relationships with respect to church-related schools, and segregation. Each of these points is almost certain to be brought into the debate. Space does not permit a detailed evaluation of the many questions involved in the Administration package, and many of the difficult points cannot be analyzed until the specific bill is available. But already some of the basic questions can be foreseen:

Is there a real and justifiable need for the undergraduate scholarships? The Administration says that the success of the testing and counseling program will be jeopardized without offering the financially needy student some hope that he will be able to continue in higher education.

Will the bill do more harm than good by pushing additional students into colleges already facing serious limitations of facilities and faculty through normally expanding enrollments without some financial aid to the institutions? Off-the-record, Administration spokesmen admit the validity of the criticism but suggest the answer is to ask Congress to provide financial aid to the colleges rather than to eliminate the scholarships.

Why should HEW start a graduate fellowship program when the National Science Foundation is handling that function also? Answer: These fellowships are not restricted to engineering and science, as are the NSF fellowships.

Q. Then why not eliminate engineering and science from the HEW fellowship program and leave that field to the more experienced and better-financed NSF? A. (off-the-record) You can't "sell" an educational aid program to Congress today which doesn't cover engineering and science.

These are only a few of the questions. There will be numerous others as the bill and debate develops. No groups will be more in the spotlight during this period than engineering and scientific organizations. NSPE officers and committees are geared by past extensive studies to carefully analyze the new bill when it is offered and to submit extensive and detailed comments to the Congressional committees on the basis of presently-approved Society policies plus such new policy declarations as may be needed on additional specific points at issue.

Spring Meeting Plans Set at MSU

President Eisenhower's recent proposals in regard to engineering education and other current legislative action concerning the problem will be on the agenda for discussion at the spring meeting of the National Society, February 13-15, at Michigan State University, East Lansing, Mich.

The theme for the meeting is "Sputnik and the Engineering Profession," and will also feature discussions on the problem of encouraging science and mathematics among high school students, the role of engineering educators, and participation of the Federal Government in engineering education.

Changes in the program find Dr. Thomas H. Hamilton, vice president for academic affairs at Michigan State University, replacing President John A. Hannah as the banquet speaker, Friday, February 14. Darward B. Varner, MSU vice president of off-campus education, will greet NSPE members at the opening 6 p.m. dinner on Thursday instead of Dean John D. Ryder as previously scheduled.

One of the highlights of the meeting will be the presentation to the Board of a petition for affiliation by the Louisiana Engineering Society.

Wyoming Society of Professional Engineers—Annual Meeting, February 6, 1958, Newcastle, Wyoming.
Oklahoma Society of Professional Engineers—Annual Meeting, February 7-8, 1958, Skirvin Hotel, Oklahoma City, Oklahoma.
NSPE Spring Meeting—February 13-15, Kellogg Center, Michigan State University, East Lansing, Michigan.
Minnesota Society of Professional Engineers—Annual Meeting, February 19-21, 1958, Nicollet Hotel, Minneapolis, Minnesota.
Tennessee Society of Professional Engineers—Annual Meeting, February 21-22, 1958, Peabody Hotel, Memphis, Tennessee.
Connecticut Society of Professional Engineers—Annual Meeting, February 22, 1958, New Haven, Connecticut.
New Mexico Society of Professional Engineers—Annual Meeting, February 22, 1958, La Fonda Hotel, Sante Fe, New Mexico.
Iowa Engineering Society—Annual Meeting, February 25-26, 1958, Hotel Ft. Des Moines, Des Moines, Iowa.
Kansas Engineering Society—Annual Meeting, February 27-March 1, 1958, Jayhawk Hotel, Topeka, Kansas.
NSPE State Presidents' Conference—March 7-8, 1958, Memorial Union, Purdue University, Lafayette, Indiana.
NSPE Annual Meeting—June 11-14, 1958, Chase-Park Plaza, St. Louis, Missouri.

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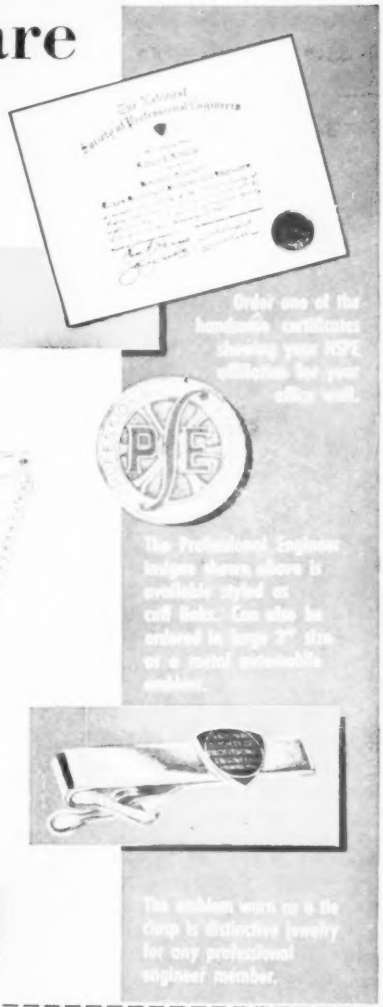

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Dr. Samuel Zearfoss, in charge of the new solar furnace at the Bureau of Standards, examines the highly-polished flat mirror (heliostat) which reflects sun's rays to parabolic mirror. The 90 x 99 inch reflector is made of aluminum on glass.

—Photos by Bureau of Standards and Deane and David Heller

• An American Engineer
Photo Story •

New Solar Furnace Tool of Basic Research

LEADING members of the engineering profession have long warned that America needs more basic or "pure" research to keep pace with tremendous developments made in applied science and engineering.

An outstanding recent example of pure research is the announcement by the United States Bureau of Standards that it has a new solar furnace in operation to test materials at temperatures as high as 3,500° Centigrade—two thirds as hot as the sun's surface.

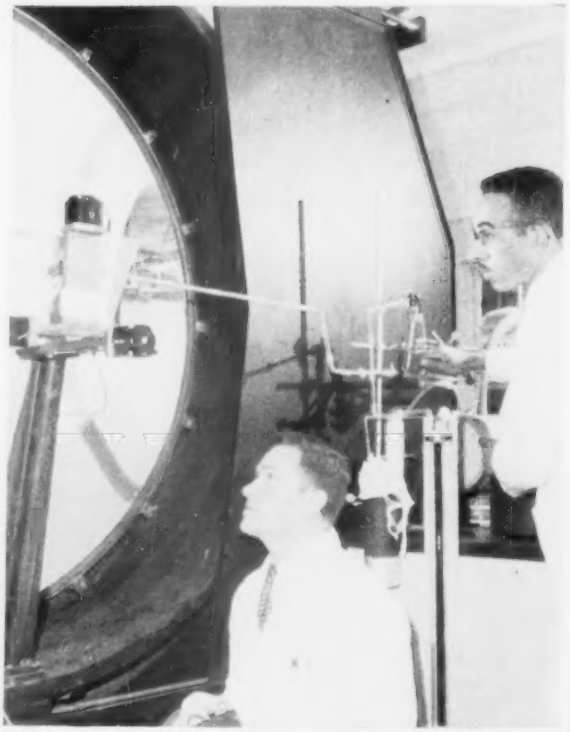
No specific applications are aimed at in solar furnace tests, according to Dr. Samuel Zearfoss, in charge. Bureau experimenters are simply making tests of the physical and chemical properties of a wide variety of materials—aluminum oxide, thorium oxide, sapphire rods, and many others.

However, the Bureau of Standards believes that data discovered will be put to use by engineers and scientists in solving such vital problems as making the nose cones of rockets, in atomic reactors, guided missles, rocket skins, and in solving the difficult re-entry problems of rockets returning to the earth's atmosphere after a journey into space.

"The solar furnace is essentially a simple device," declares Dr. J. J. Diamond, an engineer working on the project. It consists of a huge, flat mirror, (99 inches wide by 90 inches high) called the heliostat, which catches the sun's rays and reflects them to a parabolic mirror sixty inches in diameter, which, in turn, focuses them on a "hot spot" a quarter inch in diameter inside a glass or pyrex flask. It is the "hot spot" which develops the high temperatures.

ONE advantage of the solar furnace is that the great temperatures developed can be closely controlled. The mirror focuses the solar rays *inside* the flask, not where they pass through the glass. As a result, the flask isn't subject to local heating.

A "sun follower," an assembly of photocells with appropriate electronic equipment, controls the heilostat driving mechanism in response to the sun's movement across



Drs. J. J. Diamond (left) and Sylvanus Holley operate control equipment of the solar furnace. Heat is focused in glass globe at left by parabolic mirror to form 3,500° C "hot spot."

Dr. J. J. Diamond and Dr. Samuel Zearfoss, in charge of the solar furnace, give equipment last minute check before it goes in operation. "Pure research" projects being carried on at the Bureau are expected to add materially to our knowledge of behavior of substances at high temperatures.

Dr. J. J. Diamond of the National Bureau of Standards adjusts the "sun follower," a photoelectric cell that automatically moves the huge mirror to follow the sun. For pictorial purposes, (to show the equipment better) the sun follower is turned slightly to the left.

the sky—making sure that the mirror gets maximum sunlight to reflect at all times.

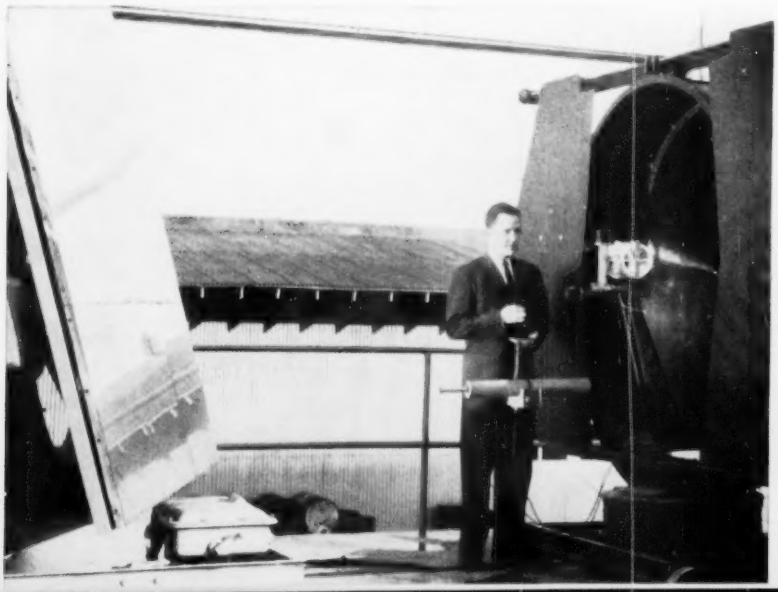
Perhaps the most important advantage of the solar furnace over other high-temperature furnaces is the opportunity it gives to conduct tests free from contaminating agents. No crucible (which might melt or give off contaminating gases to impair accuracy of the tests) is necessary. The small, quarter-inch-in-diameter "hot spot," can melt or even vaporize a small portion of some tested substance like a sapphire rod while the rest is unaffected.

The "hot spot"—test area can be isolated by closed glass tubing, which can be evacuated or filled with a gas of the experimenter's choice.

Besides studying the properties of refractory materials: melting points, strength at high temperatures, electrical conductivity at high temperatures, and so forth, the solar furnace can be used in "zone refining" of oxides of zirconium, thorium or uranium to produce extremely pure samples of those compounds.

"Growing" large single crystals of materials to determine their fundamental properties and to discover the arrangement of their atoms in space is another valuable use of the solar furnace, the Bureau says.

"We don't know what we'll find," reports Dr. Zearfoss. "This is pure research. But we anticipate some very interesting discoveries."—**End**



New Bureau of Standards solar furnace, which produces temperatures up to 3,500° Centigrade, (two thirds as hot as the surface of the sun) in operation. Flat mirror (heliostat) at left collects sun's rays and reflects them into parabolic mirror at right.

A LISTING OF THE STATE BOARDS

For the convenience of our readers, we are listing below the names and addresses of the various State Registration Boards. It is suggested that this issue of the American Engineer be filed for future use.

Alabama State Board of Registration for Professional Engineers and Land Surveyors
Clifton C. Cobb, Executive Secretary
711 High Street, Montgomery 5, Alabama

Alaska Territorial Board of Engineers and Architects Examiners
Leo H. Saarela, Secretary
Box 854, Anchorage, Alaska

Arizona State Board of Technical Registration
Mrs. Rayma Neeb, Executive Secretary,
Room 403, 128 N. 1st Avenue
Phoenix, Arizona

Arkansas State Board of Registration for Professional Engineers
B. Allen Curry, Secretary-Treasurer
627 Pyramid Life Building
Little Rock, Arkansas

California State Board of Registration for Civil and Professional Engineers
J. Douglass Locke, Executive Secretary,
529 Business & Professions Bldg.
Sacramento 14, California

Canal Zone Board of Registration for Architects and Professional Engineers
Gerald A. Doyle, Jr., Secretary
P. O. Box 223, Balboa Heights,
Canal Zone

Colorado State Board of Registration for Professional Engineers and Land Surveyors
James S. Findley, Asst. Secretary
20 Capitol Building,
Denver, Colorado

Connecticut State Board of Registration for Professional Engineers and Land Surveyors
Charles H. Coogan, Jr., Secretary
30 Oak Street
Hartford 6, Connecticut

Delaware State Board of Registration for Professional Engineers and Land Surveyors
Mrs. Marie L. DiLuchio, Asst. Secretary
11 East 12th Street
Wilmington, Delaware

District of Columbia Board of Registration For Professional Engineers
Mrs. Lacey W. Coad, Executive Secretary
1740 Massachusetts Ave., N. W.
Washington 6, D. C.

Florida State Board of Engineer Examiners
Mrs. Ann P. Clover, Executive Secretary
408 John F. Seagle Building,
Gainesville, Florida

Georgia State Board of Registration for Professional Engineers and Land Surveyors
Cecil L. Clifton, Joint Secretary
224 State Capitol, Atlanta, Georgia

Hawaii Board of Registration for Professional Engineers, Architects and Land Surveyors
Wm. C. Furer, Assistant Secretary
1909 Aleo Place, Honolulu 14, Hawaii

Idaho State Board of Engineering Examiners
Orland C. Mayer, Secretary
500 Idaho Street
Boise, Idaho

Illinois Professional Engineers' Examining Committee
Fredric R. Selcke, Supt. of Registration
State Capitol, Springfield, Illinois

Indiana State Board of Registration for Professional Engineers and Land Surveyors
Ferdinand Jehle, Secretary
145 W. Washington St.,
Indianapolis, Indiana

Iowa State Board of Engineering Examiners
W. G. Cunningham, Secretary
State House, Des Moines 19, Iowa

Kansas State Board of Engineering Examiners
Mrs. Della Sterrett, Executive Secretary
State Office Building
Topeka, Kansas

Kentucky State Board of Registration for Professional Engineers
C. S. Crouse, Secretary
College of Engineering
University of Kentucky
Lexington 29, Kentucky

Louisiana State Board of Registration for Professional Engineers and Land Surveyors
F. W. Macdonald, Executive Secretary
Room 233, Civil Engineering Building
Tulane University
New Orleans 18, Louisiana

Maine State Board of Registration for Professional Engineers
Bryant L. Hopkins, Secretary
Box 163, Waterville, Maine

Maryland State Board of Registration for Professional Engineers and Land Surveyors
J. W. Gore, Secretary
1101 Key Highway,
Baltimore 30, Maryland

Massachusetts State Board of Registration of Professional Engineers and Land Surveyors
Mrs. Gertrude J. Cammon, Secretary
to Board, Room 34, State House
Boston, Massachusetts

Michigan State Board of Registration for Architects, Professional Engineers and Land Surveyors
Henry G. Grochn, Executive Secretary
1604 Cadillac Square Building
Detroit 26, Michigan

Minnesota State Board of Registration for Architects, Engineers and Land Surveyors
Miss Helen D. Carlson, Executive Secretary
306 New York Building
St. Paul 1, Minnesota

Mississippi State Board of Registration for Professional Engineers
O. B. Curtis, Sr., Secretary
P. O. Box 3, Jackson, Mississippi

Missouri State Board of Registration for Architects and Professional Engineers
Mrs. Clemmie V. Wall, Secretary
Box 184, Jefferson City, Missouri

Montana State Board of Registration for Civil Engineers and Land Surveyors
Harvey W. Taylor, Executive Secretary
P. O. Drawer 291, Capitol Post Office
Helena, Montana

Nebraska State Board of Examiners for Professional Engineers and Architects
Roy M. Green, Secretary
State Capitol Building
Lincoln, Nebraska

Nevada State Board of Registered Professional Engineers
Stanley G. Palmer, Secretary
c/o College of Engineering, University
of Nevada, Reno, Nevada

New Hampshire State Board of Registration for Professional Engineers
W. E. Haynes, Secretary
c/o Secretary of State, State House
Concord, New Hampshire

New Jersey State Board of Examiners of Professional Engineers and Land Surveyors
Thomas E. Heathcote, Secretary
1100 Raymond Blvd.,
Newark 2, New Jersey

New Mexico State Board of Registration for Professional Engineers and Land Surveyors
Mrs. Sybel Clagett, Asst. Secretary
P. O. Box 2074,
Santa Fe, New Mexico

New York State Board of Examiners of Professional Engineers and Land Surveyors
Newell L. Freeman, Secretary
c/o New York State Education Dept.
23 South Pearl Street,
Albany 7, New York

North Carolina State Board of Registration for Professional Engineers and Land Surveyors
Robert B. Rice, Secretary
P. O. Box 5131, N. C. State College
Raleigh, North Carolina

North Dakota State Board of Registration for Professional Engineers
A. L. Bavone, Secretary
P. O. Box 1265, Minot, North Dakota

Ohio State Board of Registration for Professional Engineers and Surveyors
Robert N. Waid, Secretary
21 West Broad Street
Columbus 15, Ohio

Oklahoma State Board of Registration for Professional Engineers
Gwynne B. Hill, Secretary
2901 Classen Blvd., 225 Cameron Building, Oklahoma City, Oklahoma

Oregon State Board of Engineering Examiners
E. A. Buckhorn, Secretary
717 Board of Trade Building
Portland 4, Oregon

Panama Board of Registration for Professional Engineers
Junta Technica Nacional
Ingenieria Municipal
Edificio Municipal Transcersal 1,65
Panama, Republic of Panama

Pennsylvania State Registration Board for Professional Engineers
Miss Louise J. Franklin, Acting Secretary
556 Education Building
Harrisburg, Pennsylvania

Puerto Rico Board of Examiners of Engineers, Architects and Surveyors
Joaquin Mercado-Cruz, Secretary
452 Comercio Street
San Juan, Puerto Rico

Rhode Island State Board of Registration for Professional Engineers and Land Surveyors
Philip S. Mancini, Secretary
245 State Office Building
Providence, Rhode Island

South Carolina State Board of Engineering Examiners
Gerald H. Preacher, Secretary
P. O. Drawer 1404
Columbia, South Carolina

South Dakota State Board of Engineering and Architectural Examiners
E. D. Dake, Secretary
S. D. School of Mines and Technology,
Rapid City, South Dakota

Tennessee State Board of Architectural and Engineering Examiners
William H. Rowan, Secretary-Treasurer
P. O. Box 1816, Station B
Nashville, Tennessee

Texas State Board of Registration for Professional Engineers
Carl L. Svensen, Executive Secretary
308 W. 15th St., Austin 1, Texas

Utah Professional Engineers and Land Surveyors Examining Committee, Dept. of Business Regulation
Frank E. Lees, Director
318-A State Capitol Building,
Salt Lake City, Utah

Vermont State Board of Registration for Professional Engineers
Walter D. Emerson, Secretary
Norwich University
Northfield, Vermont

Virginia State Board for the Examination and Certification of Professional Engineers, Architects and Land Surveyors
Turner N. Burton, Secretary
P. O. Box 1-X, Richmond, Virginia

Washington State Board of Engineering Examiners
Edw. C. Dohm, Secretary
Department of Licenses, Professional
Division, Transportation Bldg.
Olympia, Washington

West Virginia State Registration Board for Professional Engineers
Robert Williamson, Jr., Secretary
301 Morrison Building
Charleston, West Virginia

Wisconsin State Registration Board of Architects and Professional Engineers
W. A. Piper, Secretary
1140 State Office Building
Madison 2, Wisconsin

Wyoming State Board of Examining Engineers
Mrs. Wilma H. Lang, Asst. Secretary
201 State Capitol Building
Cheyenne, Wyoming

N.S.P.E. Believes

A Look Into Engineering Education

By Paul H. Robbins, P. E.

Executive Director

N. S. P. E.

PRESIDENT EISENHOWER in his State of the Union address emphasized in one of his points the need for the Federal Government to be concerned with the education of young people in science and engineering. While the specific bill has not yet been dropped in the Congressional hopper, interviews and news stories from high-placed Government officials have outlined the basic pattern of the Administration's proposal.

The role of the Federal Government in engineering education has been the subject of much soul searching, not only by NSPE but by other engineering and educational organizations. NSPE has presented its thinking in two statements—one endorsed by the Board at the Dallas meeting concerning the position of the Society with respect to Federal legislation on this subject; and the second at Bismarck, warning against hasty and ill-considered action in this field. These two statements point up that NSPE believes in certain fundamental considerations.

First, NSPE believes that there is a pressing need in our country for the development of less than four-year college graduates trained in such engineering and scientific techniques that enable them to support professional engineering and scientific personnel. It is a well-known fact that in most countries other than the United States, a far higher ratio of such technicians to professional scientific personnel exists. NSPE believes that all levels of our Government and our professional societies should be concerned that greater educational opportunities are provided for the training of technicians. Unfortunately, no provision for this important area of educational opportunity is included in the President's program.

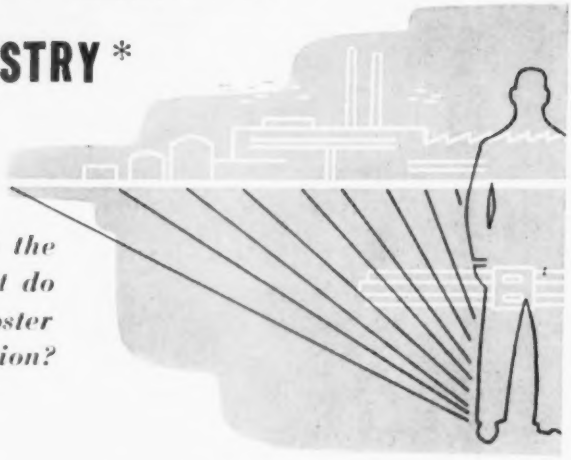
The second big area of educational need is for more highly trained scientific and engineering specialists. Basically, this training is provided in the graduate schools of our nation and results in graduate degrees, preferably to the Ph.D. level. In 1956-57 there were only 596 Ph.D.'s granted in the entire United States in engineering. It is obvious in this day of increasingly complex technology that the scientific break-throughs and advances on which our very security may depend will require a considerable increase in these trained specialists. Proposed legislation to expand our graduate schools, to encourage students to continue their education for higher degrees, are contained in both the President's proposals for a new program and an expansion of the existing programs of the National Science Foundation.

A third area of great concern to our engineering educational institutions is the necessity for expanding and improving the faculties and facilities both for graduate and undergraduate study. The enrollments in our secondary and elementary schools indicate that extensive increases in demands for higher education will exist in the next few years. Many of our institutions of higher education are already anticipating doubled enrollments in the next five to ten years. Unfortunately, there is no immediate adequate answer as to how sufficient qualified teachers can be secured for this demand. While facilities will be important, it is imperative that in order to maintain the quality of our educational systems urgent need exists for emphasis in the development of adequate faculties. Not only does this require an increase in the remuneration for teachers, but it requires a position for educators which will attract the more competent students to enter the teaching profession. Many of the legislative proposals provide for scholarships to encourage more young people to enter into higher education. NSPE believes this to be putting the cart before the horse. The sheer weight of numbers will provide more students than our present faculties and facilities can adequately care for while maintaining the quality of education needed for the welfare of our nation. NSPE believes emphasis should rather be placed on providing the kind of faculty and facilities which are needed for quality education, and that with such incentives the capable students will be adequately cared for.

—End.

Executive Research Survey Report

CAREER SATISFACTIONS of PROFESSIONAL ENGINEERS IN INDUSTRY*



What do engineers in industry rate as the most satisfying job factors? What do engineers think management can do to foster professional recognition?

You can get specific answers to these questions and many more about engineers in industry in this latest Executive Research Survey report. Based on data gathered from lengthy "depth" interviews, the survey brings out the non-salary career satisfactions of engineers in industry at three stages of professional experience—3 to 6 years, 10 to 15 years, and 20 to 25 years. "Career Satisfactions of Professional Engineers in Industry" is an intensive study of motivation factors in a representative sampling of engineers employed in American industry. Comprehensive statistical analyses—as well as detailed comments by engineers—are given throughout the published report. Use the handy coupon below to order your copy of this valuable addition to your engineering library.

Note These Chapter Titles:

- **Career Outlook of Professional Engineers**
- **Satisfaction and Frustration on the Job**
- **The Question of Professional Status**
- **Are The Values of the More Successful Engineers Different from the Others?**

* Survey made by the Opinion Research Corporation, Princeton, N. J., for the Professional Engineers Conference Board for Industry, in cooperation with the National Society of Professional Engineers.

Price:

$1.50 to NSPE members

$3 to non-members

Other Conference Board reports:

$1 to NSPE members

$2 to non-members

Professional Engineers Conference Board for Industry

2029 K Street, Northwest, Washington 6, D. C.

Yes, I am enclosing check or money order for $ ....., for which please rush the following to me:

.....copies of "Career Satisfaction of Professional Engineers In Industry" at.....

.....copies of "How to Train Engineers In Industry" at.....

.....copies of "How to Attract and Hold Engineering Talent" at.....

.....copies of "How to Improve the Utilization of Engineering Manpower" at.....

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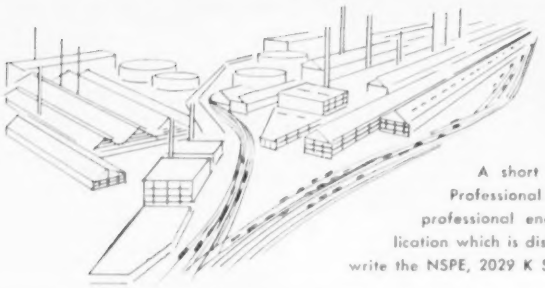
ENGINEERING EMPLOYMENT PRACTICES



DIGEST

A short digest of a monthly bulletin published by the National Society of Professional Engineers in the interest of advancing cooperative relations between professional engineers and their employers. To regularly receive the complete publication which is distributed widely to industrial, commercial and educational organizations, write the NSPE, 2029 K St., N.W., Washington 6, D. C.

✓ The Supreme Court will pass on the case in which NSPE has participated as a "friend of the court," testing whether the NLRB may include nonprofessional employees in a professional voting unit without the consent of the professionals. In granting the Government's petition for a review of the Court of Appeals decision against the NLRB position, the High Court will be concerned only with the jurisdictional issue. The Government contends that the courts do not have authority to review NLRB representation decisions, even if issued in violation of statutory prohibitions and limitations. NSPE has been granted permission to file a further brief in the Supreme Court.

* * * * *

✓ The Minnesota SPE has published a schedule of recommended minimum salaries for eight engineering grades. The monthly rates are $475, $575, $700, $800, $900, $1050, $1250 and $1750. The schedule, available from the MSPE upon request, (619 Guardian Bldg., St. Paul 1, Minn.) indicates qualifications and responsibilities for each grade.

* * * * *

✓ An NLRB ruling holds that two local AGC groups and a local of the operating engineers union committed unfair labor practices through arrangements which would require engineering and technical employees of a field engineering and surveying firm to join the labor union. The firm acted as a subcontractor to a construction contractor, but was denied work because its engineers and technicians were not members of the operating engineers' union. Back pay was ordered for four employees of the engineering-surveying firm who had been discharged for non-membership in the trade union. The situation is similar to the "Ohio Turnpike" case of several years ago in which an operating engineers' union local sought to force the chief of a survey party into their union.

* * * * *

✓ Another NLRB ruling rejected the attempt of the American Federation of Technical Engineers, AFL-CIO, to include engineering designers of General Electric's West Lynn, Mass., plants in its bargaining unit. The Board said the AFTE unit was certified in 1950 and did not include engineering designers, although the classification was made known to the union. Without passing on the company's claim that the engineering designers are professional employees, the Board noted that three of the four involved are qualified as registered engineers under the Massachusetts engineering registration law. The Board said the union could pursue its objective only by filing a petition for an election among the engineering designers.

* * * * *

✓ The Board declined to hold an assistant in a chemical laboratory and a time study engineer within the professional employee definition of the Taft-Hartley Act, citing mainly, in both cases, the lack of a collegiate degree. The employees were ruled technical employees, however, and thus excluded from a production workers' unit under Board policy.

* * * * *

✓ A survey of 223 companies shows that planned engineering recruitment from colleges in 1958 will be about on a par with 1957, while recruitment in nontechnical fields will be down fourteen per cent. Average engineering starting salary for 1958 will be $468, compared to $454 for 1957. The survey was conducted by Dr. Frank S. Endicott, director of placement, Northwestern University. It is the twelfth in a series on trends in the employment of college graduates. The Endicott report also reviewed the attitudes of employers on qualities sought in selecting graduates. Among engineering graduates, personality led the list, followed, in order, by high marks, participation in campus activities, specialized courses, part-time work and general courses.

* * * * *

✓ Sperry Gyroscope Co. must arbitrate the engineering and technician union's claim of contract violation through pay increases for transferred employees under a U.S. Court of Appeals decision. Of twenty-eight employees transferred to a new plant in Utah, sixteen received salary increases. The union said the increases were granted as an incentive to transfer, in violation of the union-contract provision that increases be granted on a merit basis only. The company contended the increases were for merit, and the contract provides that merit increases are at the sole discretion of the employer. The arbitrator will decide between the conflicting reasons given for the increases.

* * * * *

✓ American Management Association's 132-page publication, "Problems and Practices in Engineering Management" details effective engineering utilization practices of leading companies. The report shows how leading companies have improved and clarified the functions of the engineering organization. Copies are $3.75 from AMA, 1515 Broadway, Times Square, New York 36.

* * * * *

✓ Noted and Quoted: "First, more effective utilization of available scientists and engineers is the most immediately productive attack on existing shortages in these fields. Action to achieve this is a responsibility of private employers and organizations as well as governmental agencies." (President Eisenhower in Budget Message)

"Another problem is the tedious, time-wasting emphasis on monitoring. We estimate that increased technical manpower of thirty per cent is needed to cope with these paperwork Government requirements." (Donald W. Douglas, president, Douglas Aircraft Co., in testimony before Senate Preparedness Subcommittee)

Nation Set for National En

THE 1958 National Engineers' Week was launched this month with more public attention focused on the engineering profession and the sciences than ever before in American history.

With programs at the national, state, and local chapter levels, professional engineers throughout the country prepared to observe the annual tribute held each year during the week of George Washington's birthday. Centering public service projects around the theme of "Engineering Builds Broader Horizons," engineering groups sponsored career conferences for high school seniors, guided tours through industrial firms and research laboratories, exhibits, panel discussions on radio and television, and many other such activities.

At the national level, Engineers' Week Chairman John L. Bahr and other NSPE officials conferred in the executive offices of the White House with Dr. James R. Killian, Jr., a sponsor for the Week and special assistant to President Eisenhower for science and technology. The meeting was held to explore approaches to participation in the events and objectives of the Week by high Administration representatives.

Dr. Killian is one of fourteen leading engineering figures who are acting as individual sponsors for the Week.

The 1958 observance — February 16-22 — is the eighth consecutive Engineers' Week held under the general sponsorhip of NSPE. The National Society began the program in February of 1951, at which time there were a number of separate "engineers' week" held by various engineering organizations. The annual observance is now recognized by President Eisenhower, the governors of most states, and the municipal governments of hundreds of cities.

The quantity of promotional material distributed by the National Society for the 1958 Week reflects the continued enlargement of the activities of the program. This material included TV films and slides, tape recorded radio programs, posters, banners, gummed seals, newspaper articles, lapel buttons, and other such material. Approximately 10,000 copies of the booklet "An Opportunity in Public Relations for Your Firm" were distributed to industrial executives. More than 20,000 copies of the booklet "Engineering—A Career of Opportunity" were also distributed in connection with National Engineers' Week projects.

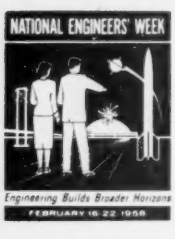
State and chapter programs for the Week include a wide variety of public service events. The Massachusetts SPE is cooperating in a broad program of civic conferences, luncheons, and other meetings designed to awaken citizens to "the true role of engineers and scientists in the new era." The Week in that State will feature the selection of the "Engineer of the Year in New England," public seminars and conferences in cooperation with Chamber of Commerce and other groups, and a "Model for America 1958" program in the City of Lexington.

In Wisconsin, high school students throughout the State have submitted essays on the subject of "The Future in Engineering For Me." Sponsored by the Wisconsin SPE, the essay contest was publicized by some 400 newspapers and radio and TV stations. More than 500 high schools in the State were contacted for participation in the contest. The winning essay was selected from the nine best essays submitted from local chapter areas in Wisconsin.

The increasingly broad participation in National Engineers' Week under the sponsorship of NSPE groups is suggested by the special letterheads developed by the Pennsylvania SPE. A total of twenty-two organizations are listed as participating in the Week in that State.

Tributes to the engineering profession are being made during the Week on a number of network radio and TV stations. Special programs and spot announcements concerning engineering are being carried on public service time contributed by local broadcasting stations.

All state society and local Engineers' Week committee chairmen are reminded that complete reports on their chapter activities should be sent to the National Society office as soon as possible. These reports are reviewed by the National Engineers' Week Committee as a source of ideas for the next year's program. The reports should include newspaper and magazine clippings, photographs of exhibits, listings of radio and TV programs, and any other information concerning the promotional efforts for the Week. — **End.**



In ceremonies at the Lexington, Mas
designated as "Model for America in
man of National Engineers' Week, l
signed by Raymond W. James, chairma

In Massachusetts, Governor Foster Furcolo signed the proclamation making National Engineers' Week official. Standing left to right are John C. Hitt, president of the New England Society of Engineers; Nicholas Stadtfeld, general chairman of the Massachusetts Committee for Engineers' Week; James F. Archibald, chairman of the Proclamations Committee; and John P. Manning, president of the Massachusetts SPE.

etts, Town Hall, the city was
" John L. Bahr, right, chair-
n as a city proclamation is
xington's Board of Selectmen.

Oklahoma Governor Raymond Gary signs a proclamation making National Engineers' Week an officially recognized observance in that State. Looking on are F. W. Denner, left, president of the Oklahoma SPE, and Sim C. Wright, secretary-treasurer of the Oklahoma group.

STRICTLY BUSINESS

Personalities . . . **Guy B. Panero Engineers** has announced that **Robert M. Pope** has returned to the firm's New York office after eighteen months in the Middle East and has been appointed chief civil engineer . . . The appointment of **Clifton Bennett** to the newly-created post of field liaison engineer has been announced by **Lewis-Shepard Company,** Watertown, Mass. . . . **George Steven** has been named assistant general manager of the Compressor and Engine Division of **Worthington Corporation,** Buffalo, N. Y. . . . **The Hinchman Corporation,** Detroit, Mich., announces the appointments of **James D. Ghesquiere,** chief engineer, as secretary and a director of the corporation, and **John A. Michelson,** principal engineer, as treasurer . . . **C. W. Turner,** president of the **American Bitumuls and Asphalt Company,** San Francisco, Calif., announces the appointment of **John M. Lewis** as assistant district manager of the Cincinnati district . . . **Freeman W. Lohr** has been appointed plant engineer for the **Maryland Shipbuilding & Drydock Company,** Baltimore, Md. The company also announced that **Walter R. Gerich** has been named chief engineer replacing **Charles F. Willis** who has resigned . . . **J. Roy Gordon** was elected to the board of directors of **The Babock & Wilcox Company** recently . . . **Karl G. Frese, Jr.,** has been appointed assistant branch manager of **Radar and Associates'** St. Petersburg, Fla., office.

Mr. Pope

Election of a new officer of **J. H. Pomeroy & Co., Inc.,** has been announced by **Robert N. Pomeroy,** president of the international contracting and engineering firm. **Earl T. Van Geem,** chief engineer for the company's overseas support operations, has been elected assistant vice president-foreign operations . . . **Robert F. West** has been appointed director of product engineering for Stanley Tools, a division of **The Stanley Works,** New Britain, Conn. . . . **Federal Pacific Electric Company,** Newark, N. J., has announced the appointment of **P. M. Christensen** as coordinator of engineering, a new staff office reporting directly to the executive vice president . . . **Lawrence A. Roe,** manager of process engineering for **International Minerals & Chemical Corporation,** Chicago, Ill., has been promoted to director of central engineering and will direct the company's programs in construction, process, and general engineering . . . **Francis D. Weeks,** president of **Lamson Corporation** of Delaware, announces the election of **Carroll A. Hennessy** as a member of the board of directors . . . **William S. Pollard, Jr.,** chief engineer of **Harland Bartholomew and Associates,** St. Louis, Mo., has become a full partner in the firm. Also elevated to partnership was **Donald Wolbrink,** resident planner of the organization's Honolulu office, it has been announced.

Mr. West

Paul W. Wyckoff has been named vice president in charge of engineering for the Airtemp Division of the **Chrysler Corporation,** Dayton, Ohio . . . **James D. Moore,** chief process engineer, has been promoted to production manager of **Vitro Uranium Company,** Salt Lake City, Utah, it has been announced by **William B. Hall,** president of **Vitro Uranium** . . . the **M. W. Kellogg Company,** New York, N. Y., a subsidiary of **Pullman Incorporated,** announces the appointment of **Joseph Sexton** as general manager of **Societe Kellogg,** the company's Paris subsidiary . . . **Robert R. Johnson** has been elected vice president-engineering of **Minnesota Rubber Company,** Minneapolis, Minn. . . . **Milton Roy Company,** Philadelphia, Pa., has announced several appointments. **Richard A. Bennett** has been promoted from the position of design engineer to chief mechanical engineer. **John P. Klembeth** has been named product engineering manager, and **William T. Griffiths** has been elected president of **Anders-Lykens Corporation,** a wholly owned subsidiary of **Milton Roy . . . Edward E. Brush** has been elected vice president (sales) of **Soiltest, Inc.,** Chicago, Ill. . . . Several changes affecting the personnel and organization of **Atlas Powder Company's** central engineering department in Wilmington, Del., have been announced by **D. J. Carroll Copps,** senior vice president. Effective March 1, Chief Engineer **J. Charles Allen** will become consultant to **Mr. Copps.** His duties as head of the department will be taken over at that time by **Wilbur H. Kordt** under the new title of director of the central engineering department . . . The appointment of **L. W. Randt** as director of program planning for **The Oliver Corporation,** Chicago, Ill. . . . **James R. Fraser** has been named vice president-engineering of **The H. K. Ferguson Company,** Cleveland, Ohio.

Mr. Sexton

Joint Project . . . A new and unusual combined engineering staff organization known as C. Stellarator Associates has been established by **Allis-Chalmers Manufacturing Company** and the **Radio Corporation of America** to design and build a facility at Princeton University for advanced research into controlled thermonuclear reactions, the two companies have announced.

New Office . . . A sales and engineering office, staffed to provide direct factory service to aircraft, electronics and other precision industries on the West Coast, has been established in Los Angeles by **The Barden Corporation** of Danbury, Conn.

1958 PROFESSIONAL ENGINEERS'

The listed concerns are sufficiently interested in Registered Professional Engineers to advertise in your professional magazine or to request a listing in this Guide. They offer products of special interest to RPE's when buying or specifying. For convenience, Building Materials are listed first followed by products under a General Classification. Keep this Guide for future reference.

Buyers Guide

BUILDING MATERIALS

BATHROOM EQUIPMENT
Wasco Products, Inc.
Bay State Rd.
Cambridge 38, Mass.

BUILDING DRAINS & ACCESSORIES
Norman Boosey Mfg. Co.
P. O. Box H
Detroit 8, Mich.
See advertisement page 5

CAULKING & SEALING
L. Sonneborn Sons, Inc.
Building Products Div.
404 Fourth Ave.
New York 16, N. Y.

Presstite-Keystone Engineering Prods. Co.
3728 Chouteau Ave.
St. Louis, Mo.

CEMENT
Atlas Mineral Products Co.
Mertztown, Pa.

CONCRETE BLOCKS
The Marietta Concrete Corp.
Marietta, Ohio

CONCRETE FORM TIES
Richmond Screw Anchor Co., Inc.
816-838 Liberty Ave.
Brooklyn 8, N. Y.

CONCRETE JOIST CONSTRUCTION
Ceco Steel Products Corp.
5601 West 26th St.
Chicago 50, Ill.

CONCRETE, PRECAST
The Flexicore Co., Inc.
1932 E. Monument Ave.
Dayton, Ohio

CONCRETE PRESTRESSED

Leap Concrete, Inc.
P. O. Box 1053
Lakeland, Fla.

Leap Standard Prestressed Concrete Structural Members are produced by 41 Leap Associates—write for data and name of Associate in your area.

(Circle 28 on Inside Back Cover)

The Marietta Concrete Corp.
Marietta, Ohio

CONCRETE STAVE
The Neff and Fry Co.
150 South Main St.
Camden, Ohio

DOORS AND SASHES
Ceco Steel Products Corp.
5601 West 26th St.
Chicago 50, Ill.

The Steelcraft Mfg. Co.
9017 Blue Ash Rd.
Cincinnati 41, Ohio

United States Plywood Corp.
55 West 44th St.
New York 36, N. Y.

FELT-WOOL OR SYNTHETICS
American Felt Co.
Box 5
Glenville, Conn.

FLASHINGS
Wasco Products, Inc.
Bay State Rd.
Cambridge 38, Mass.

FLEXICORE
The Flexicore Co., Inc.
1932 E. Monument Ave.
Dayton, Ohio

FLOOR HARDENER, CONCRETE
L. Sonneborn Sons, Inc.
Building Products Div.
404 Fourth Ave.
New York 16, N. Y.

The Master Builders Co.
7016 Euclid Ave.
Cleveland 3, Ohio

Tufcrete Co., Inc.
502 E. Locust St.
Des Moines 9, Iowa

FLOORING
Tufcrete Co., Inc.
502 E. Locust St.
Des Moines 9, Iowa

GLASS BLOCKS
Pittsburgh Corning Corp.
1 Gateway Center
Pittsburgh, Pa.

GLUED LAMINATED LUMBER
Engineering Products Co.
910 Savings & Loan Bldg.
Des Moines, Iowa

HANGERS
Arch Roof Construction Co., Inc.
113 W. 42nd St.
New York 36, N. Y.

HEATING AND VENT. EQUIP.
Airtherm Mfg. Co.
700 S. Spring Ave.
St. Louis 10, Mo.

Bell & Gossett Co.
8200 N. Austin Ave.
Morton Grove, Ill.

The Coleman Co., Inc.
250 N. St. Francis
Wichita 1, Kansas

D. J. Murray Mfg. Co.
1002-1024 Third St.
Wausau, Wisc.

The H. B. Smith Co.
Westfield, Mass.

Ilg Electric Ventilating Co.
2850 N. Pulaski Rd.
Chicago 41, Ill.

L. J. Wing Mfg. Co.
Linden, N. J.

Martin Fan & Blower Co.
4634 W. 21st Pl.
Chicago 50, Ill.

Minneapolis-Honeywell
2753 4th Ave. S.
Minneapolis 8, Minn.

Westinghouse Electric Corp.
Sturtevant Div.
Hyde Park
Boston 36, Mass.

INSERTS, CONCRETE
Richmond Screw Anchor Co., Inc.
816-838 Liberty Ave.
Brooklyn 8, N. Y.

INSULATION
American Gilsonite Co.
134 W. Broadway
Salt Lake City 1, Utah

L. O. F. Glass Fibers Co.
1810 Madison Ave.
Toledo 1, Ohio

Nopco Chemical Co.
Harrison, N. J.

The Philip Carey Mfg. Co.
320 S. Wayne Ave.
Cincinnati 15, Ohio

Pittsburgh Corning Corp.
1 Gateway Center
Pittsburgh, Pa.

INSULATION, ELECTRICAL
Irvington Div.
Minnesota Mining & Mfg. Co.
6 Argyle Terrace
Irvington 11, N. J.

INSULATION, HOT PIPE, UNDERGROUND
American Gilsonite Co.
134 W. Broadway
Salt Lake City 1, Utah

LIGHTING FIXTURES
Gruber Brothers, Inc.
125 South First St.
Brooklyn 11, N. Y.

LUMBER
DeWalt Div.
American Machine and Foundry Co.
Lancaster, Pa.

METAL CEILINGS
Granco Steel Products Co.
6506 N. Broadway
St. Louis 15, Mo.

METAL ROOF DECK
Engineering Products Co.
910 Savings & Loan Bldg.
Des Moines, Iowa

PAINTS, VARNISHES
Earl Paint Corp.
240 Genesee St.
Utica 2, N. Y.

E. I. du Pont de Nemours and Co., Inc.
Wilmington 98, Del.

Joseph Dixon Crucible
Jersey City 3, N. J.

PIPE, BITUMINIZED-FIBRE
Orangeburg Mfg. Co.
375 Park Ave.
New York 22, N. Y.

PLASTIC BINDING MACHINE
American Photocopy Equip. Co.
1920 W. Peterson Ave.
Chicago 26, Ill.

1958 PROFESSIONAL ENGINEERS' BUYERS GUIDE

PLASTIC LAMINATORS

American Photocopy Equip. Co.
1920 W. Peterson Ave.
Chicago 26, Ill.

REINFORCING BAR SUPPORTS

Richmond Screw Anchor Co., Inc.
816-838 Liberty Ave.
Brooklyn 8, N. Y.

ROOFING, GUTTERING

The Philip Carey Mfg. Co.
320 S. Wayne Ave.
Cincinnati 15, Ohio

The Ruberoid Co.
500 5th Ave.
New York 36, N. Y.

SHEATHING

United States Plywood Corp.
55 West 44th St.
New York 36, N. Y.

SHINGLES

The Philip Carey Mfg. Co.
320 S. Wayne Ave.
Cincinnati 15, Ohio

The Ruberoid Co.
500 5th Ave.
New York 36, N. Y.

SIDING AND BUILDING PAPERS

The Ruberoid Co.
500 5th Ave.
New York 36, N. Y.

SKYLIGHTS

Wasco Products, Inc.
Bay State Rd.
Cambridge 38, Mass.

SLABS, FLOOR & ROOF

The Flexicore Co., Inc.
1932 E. Monument Ave.
Dayton, Ohio

STAIR TREADS

Behr-Manning Co.
Troy, N. Y.

Klemp Metal Grating Corp.
6601 S. Melvina Ave.
Chicago 38, Ill.

STEEL BUILDINGS

The Steelcraft Mfg. Co.
9017 Blue Ash Rd.
Cincinnati 41, Ohio

STEEL—CONCRETE REINFORCING BARS

Virginia Steel Co., Inc.
3122 W. Cary St.
Richmond 21, Va.

STEEL DOOR FRAMES

The Steelcraft Mfg. Co.
9017 Blue Ash Rd.
Cincinnati 41, Ohio

STEEL FLOOR ARMOR

Alan Wood Steel Co.
Conshohocken, Pa.

Klemp Metal Grating Corp.
6601 S. Melvina Ave.
Chicago 38, Ill.

STEEL FLOOR AND ROOF CONSTRUCTION

Granco Steel Products Co.
6506 N. Broadway
St. Louis 15, Mo.

STEEL FOR LONG SPAN BLDGS.

Arch Roof Construction Co., Inc.
113 W. 42nd St.
New York 36, N. Y.

STEEL JOIST

Ceco Steel Products Corp.
5601 W. 26th St.
Chicago 50, Ill.

Engineering Products Co.
910 Savings & Loan Bldg.
Des Moines, Iowa

STEEL—OPEN WEB JOISTS

Virginia Steel Co., Inc.
3122 W. Cary St.
Richmond 21, Va.

SUMP PUMPS

Penberthy Mfg. Co.
1242 Holden Ave.
Detroit 2, Mich.

STEEL, STRUCTURAL

Arch Roof Construction Co., Inc.
113 W. 42nd St.
New York 36, N. Y.

Columbia-Geneva Div.
United States Steel Corp.
120 Montgomery St.
San Francisco 6, Calif.

Jones & Laughlin Steel Corp.
3 Gateway Center
Pittsburgh 30, Pa.

The Neff and Fry Co.
150 South Main St.
Camden, Ohio

Pittsburgh Ind. Engineering Co.
39th & Avrr.
Pittsburgh 1, Pa.

The R. C. Mahon Co.
6565 E. 8 Mile Rd.
Detroit 34, Mich.

TIMBER

DeWalt Div.
American Machine and Foundry Co.
Lancaster, Pa.

WATER HEATERS

The Coleman Co., Inc.
250 N. St. Francis
Wichita 1, Kansas

Hauck Mfg., Co.
124-136 Tenth St.
Brooklyn 15, N. Y.

WATERPROOFING MATERIALS

Dow Corning Corp.
Midland, Mich.

Earl Paint Corp.
240 Genesee St.
Utica 2, N. Y.

Protection Products Mfg. Co.
2305 Superior Ave.
Kalamazoo, Mich.

L. Sonneborn Sons, Inc.
Building Products Div.
404 Fourth Ave.
New York 16, N. Y.

Tufcrete Co., Inc.
502 E. Locust St.
Des Moines 9, Iowa

X-RAY SHIELDS—BOOTHS

Andel & Co.
5218-20 N. Kedzie Ave.
Chicago 25, Ill.

X-RAY SUITE PROTECTIVE CONSTRUCTION MATERIALS

Andel & Co.
5218-20 N. Kedzie Ave.
Chicago 25, Ill.

GENERAL CLASSIFICATIONS

—A—

ABRASIVES

Behr-Manning Co.
Troy, N. Y.

The Carborundum Co.
Niagara Falls, N. Y.

Cratex Manufacturing Co.
1600 Rollins Rd.
Burlingame, Calif.

Elgin National Watch Co.
107 National St.
Elgin, Ill.

Engis Equip. Co.
431 S. Dearborn St.
Chicago 5, Ill.

Minnesota Mining & Mfg. Co.
900 Bush St.
St. Paul 6, Minn.

Norton Co.
1 New Bond St.
Worcester 6, Mass.

Vapor Blast Mfg. Co.
3025 W. Atkinson Ave.
Milwaukee 9, Wis.

ADHESIVES

The Anchor Packing Co.
401 N. Broad St.
Phila. 8, Pa.

Chemical Development Corp.
Danvers, Mass.

Dow Corning Corp.
Midland, Mich.

Permagile Corp. of America
34-43 Fifty Sixth St.
Woodside 77, N. Y.

Rubber & Asbestos Corp.
225 Belleville Ave.
Bloomfield, N. J.

United States Plywood Corp.
55 West 44th St.
New York 36, N. Y.

AERIAL TRAMWAYS

Riblet Tramway Co.
N. 1231 Washington St.
Spokane 1, Wash.

AFTER COOLERS

Niagara Blower Co.
405 Lexington Ave.
New York 17, N. Y.

AIR CLEANERS, ELECTRONIC

Carrier Corp.
300 S. Gieddes St.
Syracuse 1, N. Y.

Westinghouse Electric Corp.
Sturtevant Div.
Hyde Park
Boston 36, Mass.

AIR COMPRESSORS

American Brake Shoe Co.
Kellogg Div.
97 Humboldt St.
Rochester 9, N. Y.

Atlas Copco Pacific Inc.
930 Brittan Ave.
San Carlos, Calif.

Chicago Pneumatic Tool Co.
6 E. 44th St.
New York 17, N. Y.

Davey Compressor Co.
Kent, Ohio

Gray Co., Inc.
56 Eleventh Ave., N.E.
Minneapolis 13, Minn.

The Jaeger Machine Co.
550 W. Spring St.
Columbus 16, Ohio

Weaver Mfg. Co.
2171 S. 9th St.
Springfield, Ill.

Westinghouse Air Brake Co.
Industrial Products Div.
Box 36
Wilmerding, Pa.

Worthington Corp.
421 Worthington Ave.
Belleville 9, N. J.

AIR CONDITIONERS

American Blower
Div. of American-Standard
Detroit 32, Mich.

Carrier Corp.
300 S. Gieddes St.
Syracuse 1, N. Y.

The Coleman Co., Inc.
250 N. St. Francis
Wichita 1, Kansas

Dole Refrigerating Co.
5910 N. Pulaski Rd.
Chicago 30, Ill.

Drayer-Hanson Div.
National U. S. Radiator Corp.
P. O. Box 2215
Terminal Annex
Los Angeles 54, Calif.

Ed Friedrich, Inc.
1117 East Commerce
San Antonio 3, Texas

Niagara Blower Co.
405 Lexington Ave.
New York 17, N. Y.

AIRCRAFT ACCESSORIES

Purolator Products, Inc.
970 New Brunswick Ave.
Rahway, N. J.

Eugene B. Hauser
1620 Park Ave.
Hoboken, N. J.

Walter Kidde & Co., Inc.
881 Main St.
Belleville 9, N. J.

U. S. Flexible Tubing Co.
Drawer "C"
Bartlett, Ill.

U. S. Propellers, Inc.
3270 E. Foothill Blvd.
Pasadena 8, Calif.

AIRCRAFT, ENGINES & EQUIP.

Bell Aircraft Corp.
P. O. Box 1
Buffalo 5, N. Y.

Eugene B. Hauser
1620 Park Ave.
Hoboken, N. J.

Piasecki Aircraft Corp.
International Airport
Island Rd.
Philadelphia 42, Pa.

Von Brand
Filtering Recorders
Smokemeter Div.
Hopewell Junction, N. Y.

AIRCRAFT GROUND SUPPORT EQUIP.

American Rectifier Corp.
93 Lafayette St.
New York 13, N. Y.

General Railway Signal Co.
P. O. Box 600
Rochester 2, N. Y.

Goodyear Aircraft Corp.
1210 Massillon Rd.
Akron 15, Ohio

AIRCRAFT SEATS-CREW & PASSENGER

Burns Aero Seat Co., Inc.
P. O. Box 127
3900 Cohasset
Burbank, Calif.

AIRCRAFT SEATS-UPHOLSTERING

Burns Aero Seat Co., Inc.
P. O. Box 127
3900 Cohasset
Burbank, Calif.

AIR DIFFUSERS

Pacific Flush Tank Co.
4241 Ravenswood Ave.
Chicago 13, Ill.

AIR ENTRAINING AGENT

The Carter-Waters Corp.
2440 Pennway
Kansas City 8, Mo.

AIR LOCKS

Mayo Tunnel & Mine Equipment
P. O. Box 1413
Lancaster, Pa.

AIR SAMPLING

Roy A. Martin Co.
809 Wellesley Dr., N.W.
Atlanta 5, Ga.

Von Brand
Filtering Recorders
Gas Sampler Div.
Hopewell Junction, N. Y.

AIR WASHERS

The Bahnson Co.
1001 S. Marshall St.
Winston-Salem 2, N. C.

ALARM SYSTEMS

Edwards Co., Inc.
Norwalk, Conn.

Ellison Draft Gage Co., Inc.
548 W. Monroe St.
Chicago 6, Ill.

Walter Kidde & Co., Inc.
881 Main St.
Belleville 9, N. J.

ALARM SYSTEMS, GAS

Mine Safety Appliances Co.
201 N. Braddock Ave.
Pittsburgh 8, Pa.

ALUMINUM

Aluminum Company of America
1501 Alcoa Bldg.
Pittsburgh 19, Pa.

DeWalt Div.
American Machine & Foundry Co.
Lancaster, Pa.

Harvey Aluminum
19200 S. Western Ave.
Torrance, Calif.

Revere Copper & Brass, Inc.
3615 Olive St.
St. Louis 8, Mo.

U. S. Steel Supply
Div., United States Steel Corp.
208 S. La Salle St.
Chicago 4, Ill.

Williams & Co., Inc.
901 Pennsylvania Ave.
Pittsburgh 33, Pa.

ALUMINUM MILL PRODUCTS

Bridgeport Brass Co.
30 Grand St.
Bridgeport 2, Conn.

ANHYDROUS AMMONIA PLANTS

H. Emerson Thomas & Assoc., Inc.
111 Quimby St.
Westfield, N. J.

ANTENNA SYSTEMS

Goodyear Aircraft Corp.
1210 Massillon Rd.
Akron 15, Ohio

ARCHITECTS SUPPLIES

The C-Thru Ruler Co.
827 Windsor St.
Hartford, Conn.

dot-N-dasher
P. O. Box 668
Cresskill, N. J.

Plan Hold Corp.
5204 Chakemco St.
South Gate, Calif.

ARTISTS SUPPLIES

The C-Thru Ruler Co.
827 Windsor St.
Hartford, Conn.

ASSEMBLY MACHINES

Aidlings, Inc.
1613 E. New York Ave.
Brooklyn 12, N. Y.

George L. Day Co., Inc.
1227-31 Niagara St.
Buffalo 13, N. Y.

ATOMIZERS

American Moistening Co.
260 W. Exchange St.
Providence 1, R. I.

AUTO SCRUBBERS

Lincoln Floor Machinery Co.
1100 Haskins Rd.
Bowling Green, Ohio

AUTOMATIC CONTROL PANELS

Automatic Switch Co.
50-56 Hanover Rd.
Florham Park, N. J.

Eagle Signal Corp.
202-20th St.
Moline, Ill.

Electronics Corp. of America
1 Memorial Dr.
Cambridge 42, Mass.

The Hays Corp.
742 E. 8th St.
Michigan City 27, Mich.

McIntosh Equip. Corp.
15 Park Row
New York 38, N. Y.

The Rucker Co.
4700 San Pablo Ave.
Oakland, Calif.

Taller & Cooper, Inc.
75 Front St.
Brooklyn 1, N. Y.

Thompson-Ramo-Wooldridge Products, Inc.
5500 West El Segundo Blvd.
Los Angeles 45, Calif.

AUTOMATIC DOOR CONTROLS

Electronics Corp. of America
1 Memorial Dr.
Cambridge 42, Mass.

AUTOMATION PRODUCTION SYSTEMS

T A B Engineers, Inc.
777 N. Milwaukee Ave.
Chicago 22, Ill.

—B—

BALANCING MACHINES

Bear Mfg. Co.
2016 Fifth Ave.
Rock Island, Ill.

Yale Associates
114 Everett Paine Blvd.
Marblehead, Mass.

BALL BEARINGS

The Federal Bearings Co., Inc.
Poughkeepsie, N. Y.

BATTERIES

Exide Industrial Div.
The Electric Storage Battery Co.
42 S. 15th St.
Philadelphia 2, Pa.

BATTERIES, DRY

National Carbon Co.
Div. Union Carbide Corp.
30 E. 42nd St.
New York 17, N. Y.

BEARINGS

Amplex Div.
Chrysler Corp.
P. O. Box 2718
Detroit 31, Mich.

BELTING, MACHINERY

The American Pulley Co.
4200 Wissahickon Ave.
Philadelphia 29, Pa.

Fabreeka Products Co., Inc.
1190 Adams St.
Boston 24, Mass.

Republic Rubber Div.
Lee Rubber & Tire Corp.
1410 Albert St.
Youngstown, Ohio

BITS, DIAMOND

Sprague & Henwood, Inc.
221 W. Olive St.
Scranton, Pa.

BLAST CLEANING EQUIPMENT

Air Placement Equipment Co.
1009 W. 24th St.
Kansas City 8, Mo.

Vapor Blast Mfg. Co.
3025 W. Atkinson Ave.
Milwaukee 9, Wis.

Wheelabrator Corp.
1408 S. Byrkit
Mishawaka, Ind.

1958 PROFESSIONAL ENGINEERS' BUYERS GUIDE

BLOCKS, WIRE ROPE
Saverman Bros., Inc.
608 S. 28th Ave.
Bellwood, Ill.

BLOWERS
Breuer Electric Mfg. Co.
5100 N. Ravenswood
Chicago 40, Ill.

Dole Refrigerating Co.
5910 N. Pulaski Rd.
Chicago 30, Ill.

Fuller Co.
Catasauqua, Pa.

Ilg Electric Ventilating Co.
2850 N. Pulaski Rd.
Chicago 41, Ill.

Martin Fan & Blower Co.
4634 W. 21st Pl.
Chicago 50, Ill.

Niagara Blower Co.
405 Lexington Ave.
New York 17, N. Y.

Ohio Blow Pipe Co.
1727 Doan Ave.
Cleveland 12, Ohio

Westinghouse Electric Corp.
Sturtevant Div.
Hyde Park
Boston 36, Mass.

L. J. Wing Mfg. Co.
Linden, N. J.

BLOW TORCHES
The Turner Brass Works
821 Park Ave.
Sycamore, Ill.

BLUE PRINT FILES
Plan Hold Corp.
5204 Chakemco St.
South Gate, Calif.

BLUEPRINT & WHITEPRINT MACHINES
Peck & Harvey Mfg. Corp.
5650 N. Western Ave.
Chicago 45, Ill.

BOILERS
Bigelow Co.
River & Lloyd Sts.
New Haven, Conn.

Orr & Sembower, Inc.
Morgantown Rd.
Reading, Pa.

BOILERS, ACCESSORIES
The Babcock & Wilcox Co.
161 E. 42nd St.
New York 17, N. Y.

Combustion Engineering, Inc.
200 Madison Ave.
New York 16, N. Y.

Foster Wheeler Corp.
666 Fifth Ave.
New York 19, N. Y.

The James Leffel & Co.
426 East St.
Springfield, Ohio

The H. B. Smith Co.
Westfield, Mass.

BOILER FEED SYSTEMS
Graver Water Conditioning Co.
216 W. 14th St.
New York 11, N. Y.

The James Leffel & Co.
426 East St.
Springfield, Ohio

BONDING MORTARS
Refractory & Insulation Corp.
120 Wall St.
New York 5, N. Y.

BOOKS, TECHNICAL, SCIENTIFIC
Reinhold Publishing Corp.
430 Park Ave.
New York, N. Y.

The Ronald Press Co.
15 E. 26th St.
New York 10, N. Y.

United Catalog Publishers, Inc.
60 Madison Ave.
Hempstead, N. Y.

BRAKE LININGS
Lasco Brake Products Corp.
2615 Magnolia St.
Oakland, Calif.

BRASS & COPPER MILL PRODUCTS
Bridgeport Brass Co.
30 Grand St.
Bridgeport 2, Conn.

BURNERS, COMBINATION GAS & OIL
Ray Burner Co.
1301 San Jose Ave.
San Francisco 12, Calif.

BURNERS, GAS
Ray Burner Co.
1301 San Jose Ave.
San Francisco 12, Calif.

BURNERS, OIL
Ray Burner Co.
1301 San Jose Ave.
San Francisco 12, Calif.

—C—

CABLE, ELECTRIC
The Ansonia Wire & Cable Co.
111 Martin St.
Ashton, R. I.

Hallett Mfg. Co.
5910 Bowcroft St.
Los Angeles 16, Calif.

National Electric Products
Two Gateway Center
Pittsburgh 22, Pa.

CABLE, MULTI CONDUCTOR
The Ansonia Wire & Cable Co.
111 Martin St.
Ashton, R. I.

CABLEWAYS
Saverman Bros., Inc.
608 S. 28th Ave.
Bellwood, Ill.

CALCULATING MACHINES
Paul S. Morton Engineering Service
P. O. Box 146
5131 Meadowlark Lane
Kalamazoo, Mich.

Remington Rand
Sperry Rand Corp.
315 Fourth Ave.
New York 10, N. Y.

CALIPERS
Lufkin Rule Co.
1730 Hess St.
Saginaw, Mich.

CAMERAS
Eastman Kodak Co.
343 State St.
Rochester 4, N. Y.

Electronic Tube Corporation
1200 E. Mermaid Lane
Phila. 18, Pa.

CAST ALLOYS
Alloy Steel Castings Co.
248 County Line Rd.
Southampton, Pa.

Pabcast, Inc.
355 West Olive St.
Gardena, Calif.

CASTINGS
Aluminum Company of America
1501 Alcoa Bldg.
Pittsburgh 19, Pa.

Alloy Steel Castings Co.
248 County Line Rd.
Southampton, Pa.

Enterprise Engine & Machinery Co.
18th & Florida Sts.
San Francisco, Calif.

General Railway Signal Co.
P. O. Box 600
Rochester 2, N. Y.

Meehanite Metal Corp.
714 North Ave.
New Rochelle, N. Y.

Pabcast, Inc.
355 West Olive St.
Gardena, Calif.

T. Shriver & Co., Inc.
815 Hamilton St.
Harrison, N. J.

CATALOG, ELECTRONIC PARTS
United Catalog Publishers, Inc.
60 Madison Ave.
Hempstead, N. Y.

CENTRIFUGES
Hepworth Machine Co., Inc.
42-11 Ninth St.
Long Island 1, N. Y.

CENTRIFUGAL SEPARATORS
Hepworth Machine Co., Inc.
42-11 Ninth St.
Long Island 1, N. Y.

CERAMICS, ELEC. PORCELAIN
The Universal Clay Products Co.
1528 1st St.
Sandusky, Ohio

CHAIN
Columbus McKinnon Chain Corp.
Fremont St.
Tonawanda, N. Y.

CHAIR LIFTS
Riblet Tramway Co.
N. 1231 Washington St.
Spokane 1, Wash.

CHECK WEIGHING EQUIPMENT
Bartelt Engineering Co.
1900 Harrison Ave.
Rockford, Ill.

CHEMICALS, CLEANING
FX-Lab Mfg. Co.
77 Okner Parkway
Livingston, N. J.

Octagon Process, Inc.
60 Bank St.
Staten Island 1, N. Y.

Morgen Manufacturing Co.
117 West Third St.
Yankton, S. Dak.

CHEMICALS, INDUSTRIAL
Diamond Alkali Co.
300 Union Commerce Bldg.
Cleveland 14, Ohio

The Dow Chemical Co.
Midland, Mich.

E. I. du Pont de Nemours & Co., Inc.
Wilmington 98, Del.

Hercules Powder Co.
900 Market St.
Wilmington 99, Del.

Hooker Electrochemical Co.
26 Iroquois St.
Niagara Falls, N. Y.

Mallinckrodt Chemical Works
Second & Mallinckrodt Sts.
St. Louis 7, Mo.

Nopco Chemical Co.
Harrison, N. J.

Octagon Process, Inc.
60 Bank St.
Staten Island 1, N. Y.

Wyandotte Chemicals Corp.
Wyandotte, Mich.

CHEMICAL PROCESSING EQUIPMENT
Read Standard
York, Pa.

CHEMICALS, SEWAGE TREATMENT
Allyn Chemical Co.
4537 Mayfield Rd.
Cleveland 21, Ohio

Diamond Alkali Co.
300 Union Commerce Bldg.
Cleveland 14, Ohio

CHEMICALS, SEWAGE TREATMENT (CONT.)

FX-Lab Mfg. Co.
77 Okner Parkway
Livingston, N. J.

CHLORIMETERS

W. A. Taylor & Co.
7300 York Rd.
Baltimore 4, Md.

CLAMPS, MACHINE TOOL

Alpha Tool & Supply Co.
Closter, N. J.

CLEANING EQUIPMENT

Breuer Electric Mfg. Co.
5100 N. Ravenswood
Chicago 40, Ill.

Detrex Chemical Industries, Inc.
P. O. Box 501
Detroit 32, Mich.

Lincoln Floor Machinery Co.
1100 Haskins Rd.
Bowling Green, Ohio

Vapor Blast Mfg. Co.
3025 W. Atkinson Ave.
Milwaukee 9, Wis.

CLUTCHES

Formsprag Co.
23601 Hoover Rd.
Warren, Mich.

The Hilliard Corp.
W. Fourth St.
Elmira, N. Y.

International Resistance Co.
401 N. Broad St.
Phila. 8, Pa.

Whitney Chain Co.
237 Hamilton St.
Hartford 2, Conn.

COAL

Bituminous Coal Institute
Southern Bldg.
15th & H Sts., N. W.
Washington 5, D. C.

COATINGS

Atlas Mineral Products Co.
Mertztown, Pa.

The Dampney Co.
50 Business St.
Hyde Park
Boston, Mass.

Earl Paint Corp.
240 Genessee St.
Utica 2, N. Y.

Permagile Corp. of America
34-43 Fifty Sixth St.
Woodside 77, N. Y.

Preco Chemical Corp.
119 Allen Blvd.
Farmingdale, N. Y.

COAXIAL SWITCHES

General Communication Co.
681 Beacon St.
Boston 15, Mass.

COILS, INDUSTRIAL

Tranter Mfg., Inc.
735 E. Hazel St.
Lansing 9, Mich.

Westinghouse Electric Corp.
Sturtevant Div.
Hyde Park
Boston 36, Mass.

COMMUNICATIONS EQUIPMENT

Automatic Electric Co.
Northlake, Ill.

Dukane Corp.
St. Charles, Ill.

Edwards Co., Inc.
Norwalk, Conn.

Electronic Engineering Co.
362 W. Bowery St.
Akron 7, Ohio

Taller & Cooper, Inc.
75 Front St.
Brooklyn 1, N. Y.

Weedfall Engineering Co.
3543 Fontana Dr.
Dallas 20, Texas

COMPRESSORS, ROTARY

American Brake Shoe Co.
Kellogg Div.
97 Humboldt St.
Rochester 9, N. Y.

Davey Compressor Co.
Kent, Ohio

Fuller Co.
Catasauqua, Pa.

The Jaeger Machine Co.
550 W. Spring St.
Columbus 16, Ohio

COMPUTERS

Goodyear Aircraft Corp.
1210 Massillon Rd.
Akron 15, Ohio

Thompson-Ramo-Wooldridge Products, Inc.
5500 West El Segundo Blvd.
Los Angeles 45, Calif.
RW-300 Computer for Process Control and Data Logging
(Circle 20 on Inside Back Cover)

CONCRETE ADDITIVES

Eugene B. Hauser
1620 Park Ave.
Hoboken, N. J.

The Master Builders Co.
7016 Euclid Ave.
Cleveland 3, Ohio

Preco Chemical Corp.
119 Allen Blvd.
Farmingdale, N. Y.

Wyandotte Chemicals Corp.
Wyandotte, Mich.

CONCRETE CURING COMPOUNDS

Presstite-Keystone Engineering Prods. Co.
3738 Chouteau Ave.
St. Louis, Mo.

CONCRETE EQUIPMENT

Air Placement Equipment Co.
1009 W. 24th St.
Kansas City 8, Mo.

Chain Belt Co.
4701 W. Greenfield Ave.
Milwaukee 1, Wis.

Koehring Div.
Koehring Co.
3026 W. Concordia Ave.
Milwaukee 16, Wis.

Simplex Forms System, Inc.
5605 Industrial Ave.
Rockford, Ill.

CONCRETE HARDENERS

The Master Builders Co.
7016 Euclid Ave.
Cleveland 3, Ohio

Preco Chemical Corp.
119 Allen Blvd.
Farmingdale, N. Y.

CONDENSERS, EVAPORATIVE

Tranter Mfg. Inc.
735 E. Hazel St.
Lansing 9, Mich.

CONDENSER TUBES

Bridgeport Brass Co.
30 Grand St.
Bridgeport 2, Conn.

CONDUIT, UNDERGROUND

Durant Insulated Pipe Co.
Palo Alto, Calif.

Flexaust Co.
100 Park Ave.
New York 17, N. Y.

Johns-Manville
22 E. 40th St.
New York 16, N. Y.

National Electric Products
Two Gateway Center
Pittsburgh 22, Pa.

Orangeburg Mfg. Co.
375 Park Ave.
New York 22, N. Y.

CONSTRUCTION FORMS

Simplex Forms System, Inc.
5605 Industrial Ave.
Rockford, Ill.

CONTINUOUS PROCESSING EQUIPMENT

Industrial Ovens, Inc.
13825 Triskett Rd.
Cleveland 11, Ohio

CONTROL EQUIPMENT

Automatic Electric Co.
Northlake, Ill.

Bailey Meter Co.
1050 Ivanhoe Rd.
Cleveland 10, Ohio

Bogue Elec. Mfg. Co.
52 Iowa Ave.
Paterson 3, N. J.

Conoflow Corp.
2100 Arch St.
Philadelphia 3, Pa.

Cutler-Hammer, Inc.
315 N. 12th St.
Milwaukee 1, Wis.

Fenwal, Inc.
Pleasant St.
Ashland, Mass.

The Foxboro Co.
Foxboro, Mass.

General Control Co.
1200 Soldiers Field Rd.
Boston 34, Mass.

General Controls Co.
801 Allen Ave.
Glendale 1, Calif.

General Railway Signal Co.
P. O. Box 600
Rochester 2, N. Y.

Hagan Chemical & Controls, Inc.
323 Fourth Ave.
Pittsburgh 30, Pa.

Minneapolis-Honeywell
2753 4th Ave. S.
Minneapolis 8, Minn.

Sarco Co., Inc.
Sarcotherm Controls, Inc.
635 Madison Ave.
New York 22, N. Y.

Thompson-Ramo-Wooldridge Products, Inc.
5500 West El Segundo Blvd.
Los Angeles 45, Calif.
RW-300 Computer for Process Control and Data Logging
(Circle 21 on Inside Back Cover)

Westinghouse Air Brakes Co.
Industrial Products Div.
Box 36
Wilmerding, Pa.

CONTROL JOINTS

The Carter-Waters Corp.
2440 Pennway
Kansas City 8, Mo.

CONTROLS, PRESSURE, TEMPERATURE & LIQUID LEVEL

Leslie Co.
Lyndhurst, N. J.

CONVEYORS

The American Pulley Co.
4200 Wissahickon Ave.
Philadelphia 29, Pa.

Anchor Steel & Conveyor Co.
6906 Kingsley Ave.
Dearborn, Mich.

The E. W. Buschman Co.
4363 Clifton Ave.
Cincinnati 32, Ohio

Canton Stoker Corp.
Andrew Place, S.W.
Canton, Ohio

The Colson Corp.
Special Products Div.
440 Somerville Ave.
Somerville 32, Mass.

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CONVEYORS (CONT.)

Columbus McKinnon Chain Corp.
Fremont St.
Tonawanda, N. Y.

Fuller Co.
Catasauqua, Pa.

Hewitt-Robins, Inc.
666 Glenbrook Rd.
Stamford, Conn.

International Conveyor & Washer Corp.
652 E. Fort St.
Detroit 26, Mich.

Kolman Mfg. Co.
W. 12th St. Rd.
Sioux Falls, S. Dak.

Logan Co.
200 Cabel St.
Louisville 6, Ky.

Samuel Olson Mfg. Co., Inc.
2418 Bloomingdale Ave.
Chicago 47, Ill.

M-H Standard Corp.
515 Communipaw Ave.
Jersey City 4, N. J.

Morgen Manufacturing Co.
117 West Third St.
Yankton, S. Dak.

CONVEYORS, PNEUMATIC

Ohio Blow Pipe Co.
1727 Doan Ave.
Cleveland 12, Ohio

COOLING TOWERS

Foster Wheeler Corp.
666 Fifth Ave.
New York 19, N. Y.

J. E. Pritchard & Co. of Calif.
4625 Roanoke Pkwy.
Kansas City 12, Mo.

COPPER & COPPER ALLOYS

Chase Brass & Copper Co.
236 Grand St.
Waterbury 20, Conn.

Revere Copper & Brass, Inc.
3615 Olive St.
St. Louis 8, Mo.

Williams & Co., Inc.
901 Pennsylvania Ave.
Pittsburgh 33, Pa.

CORROSION INHIBITORS

Octagon Process, Inc.
60 Bank St.
Staten Island 1, N. Y.

Universal Oil Products Co.
30 Algonquin Rd.
Des Plaines, Ill.

Western Chemical Co.
713 Washington St.
Kansas City 5, Mo.

CORROSION PREVENTION

Cathodic Protection Service
4601 Stanford
Houston 6, Texas

CORROSION RESISTANT EQUIPMENT

Haveg Industries, Inc.
900 Greenbank Rd.
Wilmington 8, Del.

COUPLINGS

Ajax Flexible Coupling Co., Inc.
Portage & English Sts.
Westfield, N. Y.

Thomas Flexible Coupling Co.
Main St. & Biddle St.
Warren, Pa.

Whitney Chain Co.
237 Hamilton St.
Hartford 2, Conn.

COUPLINGS, FLATING SHAFT

Thomas Flexible Coupling Co.
Main St. & Biddle St.
Warren, Pa.

COUPLINGS, FLEXIBLE SHAFT

Thomas Flexible Coupling Co.
Main St. & Biddle St.
Warren, Pa.

COUPLINGS, HOSE

Anchor Coupling Co., Inc.
342 N. Fourth St.
Libertyville, Ill.

COUPLINGS, PIPE

Dresser Mfg. Div.
Bradford, Pa.

CRANES

Anthony Co.
End of Baker
Streator, Ill.

American Chain & Cable Co., Inc.
929 Connecticut Ave.
Bridgeport 2, Conn.

American Hoist & Derrick Co.
63 S. Robert
St. Paul 7, Minn.

The Elwell-Parker Electric Co.
4326 St. Clair
Cleveland 3, Ohio

Koehring Div.
Koehring Co.
3026 W. Concordia Ave.
Milwaukee 16, Wis.

Kolman Mfg. Co.
W. 12th St. Road
Sioux Falls, S. Dak.

CRUSHERS, METAL TURNINGS

American Pulverizerlo
1249 Macklind Ave.
St. Louis 10, Mo.

CYLINDERS

Westinghouse Air Brake Co.
Industrial Products Div.
Box 36
Wilmerding, Pa.

CYLINDERS, AIR & HYDRAULIC

The Airoyal Co.
1990 Springfield Ave.
Maplewood, N. J.

—D—

DARKROOM SINKS & TANKS (STAINLESS STEEL)

Peck & Harvey Mfg. Corp.
5650 N. Western Ave.
Chicago 45, Ill.

D. C. CAPACITORS

Tobe Deutschmann Corp.
Providence Highway
Norwood, Mass.

DECALCOMANIA

The Meyercord Co.
5323 W. Lake St.
Chicago 44, Ill.

E. F. Twomey Co., Inc.
728 W. Tenth Pl.
Los Angeles 15, Calif.

DEGREASERS

Detrex Chemical Industries, Inc.
P. O. Box 501
Detroit 32, Mich.

DE-HUMIDIFIERS

Drayer-Hanson Div.
National U. S. Radiator Corp.
P. O. Box 2215
Terminal Annex
Los Angeles 54, Calif.

Westinghouse Electric Corp.
Sturtevant Div.
Hyde Park
Boston 36, Mass.

DEHYDRATORS

J. F. Pritchard & Co. of Calif.
4625 Roanoke Pkwy.
Kansas City 12, Mo.

DEHYDRATORS, AIR

Graver Water Conditioning Co.
216 W. 14th St.
New York 11, N. Y.

Hankison Corp.
College & Pike
Canonsburg, Pa.

DIECASTINGS

Pabcast, Inc.
355 West Olive St.
Gardena, Calif.

DIES

Jackson-Walter Co.
2027 Arch St.
Philadelphia 3, Pa.

Pabcast, Inc.
355 West Olive St.
Gardena, Calif.

Rockford Crescent Mfg. Co.
420 Buckbee St.
Rockford, Ill.

DIESEL ENGINES

Allis-Chalmers
Buda Div.
1135 S. 70th St.
Milwaukee 1, Wis.

Chicago Pneumatic Tool Co.
6 E. 44th St.
New York 17, N. Y.

Enterprise Engine & Machinery Co.
18th & Florida Sts.
San Francisco, Calif.

Fairbanks, Morse & Co.
600 So. Michigan Ave.
Chicago 19, Ill.

International Harvester Co.
180 N. Michigan Ave.
Chicago 1, Ill.

D. W. Onan & Sons, Inc.
2515 University Ave., S. E.
Minneapolis 14, Minn.

Von Brand
Filtering Recorders
Smokemeter Div.
Hopewell Junction, N. Y.

Worthington Corp.
421 Worthington Ave.
Belleville 9, N. J.

DIODES

International Rectifier Corp.
1521 E. Grand Ave.
El Segundo, Calif.

International Resistance Co.
401 N. Broad St.
Philadelphia 8, Pa.

Raytheon Mfg. Co.
55 Chapel St.
Newton 58, Mass.

DISPLAY CABINETS

Fowler Equipment Co.
732 N. Highland Ave.
Aurora, Ill.

DISPLAY SHELVING

Fowler Equipment Co.
732 N. Highland Ave.
Aurora, Ill.

DRAFTING MATERIALS

Alvin & Co., Inc.
Palisado Ave.
Windsor, Conn.
See advertisement page 6

The C-Thru Ruler Co.
827 Windsor St.
Hartford, Conn.

Joseph Dixon Crucible
Jersey City 3, N. J.

dot-N-dasher
P. O. Box 668
Cresskill, N. J.

Ozalid Div.
General Aniline & Film Corp.
19 Anseo Rd.
Johnson City, N. Y.

E. F. Twomey Co., Inc.
728 W. Tenth Pl.
Los Angeles 15, Calif.

DRAWING INSTRUMENTS

Alvin & Co., Inc.
Palisado Ave.
Windsor, Conn.
See advertisement page 6

Compass Instrument & Optical Co., Inc.
104 East 25th St.
New York 10, N. Y.

Kern Instruments, Inc.
120 Grand St.
White Plains, N. Y.

Porta-Trace, Inc.
Dept. A/E
342 Clinton St.
Binghamton, N. Y.

Drawing Instruments

(Circle 22 on Inside Back Cover)

Richard Best Pencil Co.
Springfield, N. J.

E. F. Twomey Co., Inc.
728 W. Tenth Pl.
Los Angeles 15, Calif.

The Walpole Co.
100 Boylston St.
Boston 16, Mass.

DRAWING STANDS

The General Fireproofing Co.
Youngstown 1, Ohio

Plan Hold Corp.
524 Chakemco St.
South Gate, Calif.

DRILLING MACHINES

Model Machine Co., Inc.
4729 Hawthorne St.
Philadelphia 24, Pa.

DRILLS, DIAMOND CORE

Sprague & Henwood, Inc.
221 W. Olive St.
Scranton, Pa.

DRILLS, ELECTRIC

The Black & Decker Mfg. Co.
E. Pennsylvania Ave.
Towson 4, Md.

Skil Corp.
5033 Elston Ave.
Chicago 30, Ill.

Thor Power Tool Co.
Prudential Plaza
Chicago 1, Ill.

DRILLS, ROCK & PAVEMENT

Atlas Copco Pacific, Inc.
930 Brittan Ave.
San Carlos, Calif.

DRIVES, ADJUSTABLE-SPEED

The Louis Allis Co.
427 E. Stewart St.
Milwaukee 1, Wis.

American Blower
Division of America-Standard
Detroit 32, Mich.

The American Pulley Co.
4200 Wissahickon Ave.
Philadelphia 29, Pa.

Anchor Steel & Conveyor Co.
6906 Kingsley Ave.
Dearborn, Mich.

Fidelity Instrument Corp.
1000 E. Boundary Ave.
York, Pa.

Reliance Electric & Eng. Co.
24701 Euclid Ave.
Cleveland 17, Ohio

DRYERS—GAS, AIR

Gas Atmospheres, Inc.
20011 West Lake Rd.
Cleveland 16, Ohio

DRYERS, INDUSTRIAL

J. O. Ross Engineering Corp.
444 Madison Ave.
New York 22, N. Y.

DUPLICATORS

Rex-Rotary
387 Fourth Ave.
New York 16, N. Y.

DUST CLEANING EQUIPMENT

Breuer Electric Mfg. Co.
5100 N. Ravenswood
Chicago 40, Ill.

The Johnson March Corp.
1724 Chestnut St.
Philadelphia 3, Pa.

Westinghouse Electric Corp.
Sturtevant Div.
Hyde Park
Boston 36, Mass.

DUST COLLECTORS

Iowa Manufacturing Co.
916 - 16th St., N. E.
Cedar Rapids, Iowa

The Johnson March Corp.
1724 Chestnut St.
Philadelphia 3, Pa.

The Kirk & Blum Mfg. Co.
3134 Forrer St.
Cincinnati 9, Ohio

The R. C. Mahon Co.
6565 East 8 Mile Rd.
Detroit 34, Mich.

Roy A. Martin Co.
809 Wellesley Dr., N. W.
Atlanta 5, Ga.

Ohio Blow Pipe Co.
1727 Doan Ave.
Cleveland 12, Ohio

Research-Cottrell, Inc.
Bound Brook, N. J.

Wheelabrator Corp.
1408 S. Byrkit
Mishawaka, Ind.

DUST MASKS

General Scientific Equipment Co.
7516 Limekiln Pike
Philadelphia 50, Pa.

—E—

EARTH MOVING EQUIPMENT

American Hoist & Derrick Co.
63 S. Robert
St. Paul 7, Minn.

The Galion Iron Works & Mfg. Co.
South St.
Galion, Ohio

International Harvester Co.
180 N. Michigan Ave.
Chicago 1, Ill.

Jay Co.
2222 S. 3rd St.
Columbus 7, Ohio

ELECTRIC BRAKES, CLUTCHES

American Rectifier Corp.
93 Lafayette St.
New York 13, N. Y.

ELECTRIC EQUIPMENT

Bradley Co., Inc.
3341 Arch St.
Philadelphia 4, Pa.

Crouse-Hinds Co.
Wolf St. at 7th N.
Syracuse, N. Y.

Cutler-Hammer, Inc.
315 N. 12th St.
Milwaukee 1, Wis.

Micro Switch
Div. Minneapolis-Honeywell Regulator Co.
Freeport, Ill.

Nelson Electric Mfg. Co.
P. O. Box 5385
Tulsa, Okla.

Feedrail Corp.
1250 Barclay St.
New York 7, N. Y.

Unistrut Products Co.
933 Washington Blvd.
Chicago 7, Ill.

ELECTRIC LANTERNS

Delta Electric Co.
Marion, Ind.

ELECTRIC MOTORS

The Louis Allis Co.
427 E. Stewart St.
Milwaukee 1, Wis.

Bogue Elec. Mfg. Co.
52 Iowa Ave.
Paterson 3, N. J.

Century Electric Co.
1806 Pine St.
St. Louis 3, Mo.

Diehl Mfg. Co.
1197 Finderne Ave.
Somerville, N. J.

Fairbanks, Morse & Co.
600 So. Michigan Ave.
Chicago 19, Ill.

Howell Electric Motors Co.
409 No. Roosevelt St.
Howell, Mich.

Reliance Electric & Eng. Co.
24701 Euclid Ave.
Cleveland 17, Ohio

ELECTRICAL CABLE EQUIPMENT

T. J. Cope Div.
Rome Cable Corp.
3rd & Walnut Sts.
Collegeville, Pa.

ELECTRICAL SUPPLIES

Holub Industries, Inc.
413 DeKalb Ave.
Sycamore, Ill.

Irvington Div.
Minnesota Mining & Mfg. Co.
6 Argyle Terrace
Irvington 11, N. J.

ELECTRO SENSITIVE RECORDING PAPER

Alfax Paper & Eng. Co.
P. O. Box 125
Westboro, Mass.

ELECTROMAGNETIC DEVICES

Avion Div.
ACF Industries, Inc.
11 Park Pl.
Paramus, N. J.

Automatic Switch Co.
50-56 Hanover Rd.
Florham Park, N. J.

ELECTRON TUBES

Allied Radio Corp.
100 N. Western Ave.
Chicago 90, Ill.
See advertisement page 9

ELECTRONIC COMMUNICATION EQUIPMENT

Alfax Paper & Eng. Co.
P. O. Box 125
Westboro, Mass.

DuKane Corp.
St. Charles, Ill.

Electronic Engineering Co.
362 W. Bowery St.
Akron 7, Ohio

Executone, Inc.
415 Lexington Ave.
New York 17, N. Y.

Theodore J. Kauffeld, M.E., P.E.
150 Broadway
New York 38, N. Y.

The Ralph M. Parsons Co.
617 South Olive St.
Los Angeles 14, Calif.

ELECTRONIC COMPUTERS

Remington Rand
Sperry Rand Corp.
315 Fourth Ave.
New York 10, N. Y.

Thompson-Ramo-Wooldridge Products, Inc.
5500 West El Segundo Blvd.
Los Angeles 45, Calif.

ELECTRONIC ENGINEERING SERVICES

General Communications Co.
681 Beacon St.
Boston 15, Mass.

ELECTRONIC EQUIPMENT

Allied Radio Corp.
100 N. Western Ave.
Chicago 90, Ill.
See advertisement page 9

Associated Research Inc.
3758 W. Belmont
Chicago 18, Ill.

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ELECTRONIC EQUIP. (CONT.)

Avion Div.
ACF Industries, Inc.
11 Park Pl.
Paramus, N. J.

Bell Aircraft Corp.
P. O. Box 1
Buffalo 5, N. Y.

Electronics Corp of America
1 Memorial Dr.
Cambridge 42, Mass.

Electronic Tube Corp.
1200 E. Mermaid Lane
Phila. 18, Pa.

Farnsworth Electronic Co.
Fort Wayne, Ind.

Fischer & Porter Co.
13 Warminster Rd.
Hatboro, Pa.

General Communications Co.
681 Beacon St.
Boston 15, Mass.

General Radio Co.
275 Massachusetts Ave.
Cambridge 39, Mass.

Theodore J. Kauffeld, M.E., P.E.
150 Broadway
New York 38, N. Y.

The W. L. Maxson Corp.
475 Tenth Ave.
New York 18, N. Y.

The Ralph M. Parsons Co.
617 South Olive St.
Los Angeles 14, Calif.

Potter Aero. Corp.
Route 22
Union, N. J.

Sylvania Electric Products, Inc.
1740 Broadway
New York 19, N. Y.

Vectron, Inc.
1632 Trapelo Road
Waltham 54, Mass.

Wareforms, Inc.
333 Sixth Ave.
New York 14, N. Y.

Weedfall Engineering Co.
3543 Fontana Dr.
Dallas 20, Texas

ELECTRONIC TUBES

Raytheon Mfg. Co.
55 Chapel St.
Newton 58, Mass.

ELECTRONICS ALLOYS

The Carpenter Steel Co.
Reading, Pa.

ELECTROPLATING

City Plating Works, Inc.
905 Honeyspot Road
Stratford, Conn.

Hard Chrome Specialists
All other types
(Circle 23 on Inside Back Cover)

ELEVATORS

Buck Equipment Corp.
720 Anderson Ferry Rd.
Cincinnati 38, Ohio

Rotary Lift Co.
Div. Dover Corp.
1054 Kansas St.
Memphis, Tenn.

ENGINEERING, ATOMIC POWER

Pioneer Service & Engineering Co.
231 S. LaSalle St.
Chicago 4, Ill.

ENGINEERING, DESIGN

Pioneer Service & Engineering Co.
231 S. LaSalle St.
Chicago 4, Ill.

ENGINEERS SUPPLIES

dot-N-dasher
P. O. Box 668
Cresskill, N. J.

Lehigh Safety Shoe Co.
First & Minor Sts.
Emmaus, Pa.

Paul S. Morton Engineering Service
P. O. Box 146
5131 Meadowlark Lane
Kalamazoo, Mich.

Plan Hold Corp.
5204 Chakemco St.
South Gate, Calif.

ENGINES, GAS TURBINE

Solar Aircraft Co.
2200 Pacific Hwy.
San Diego 12, Calif.

Von Brand
Filtering Recorders
Smokemeter Div.
Hopewell Junction, N. Y.

EPOXY RESINS

Polyplastex United, Inc.
870 Springfield Rd.
Union, N. J.

EVAPORATORS

The Friscom-Russell Co.
Massillon, Ohio

Struthers Wells Corp.
Warren, Pa.

EXPANSION JOINTS

Zallea Brothers
Locust & Taylor Sts.
Wilmington 99, Del.

EXPLOSIVES

Hercules Powder Co.
900 Market St.
Wilmington 99, Del.

—F—

FANS

U. S. Propellers, Inc.
3270 E. Foothill Blvd.
Pasadena 8, Calif.

FANS, EXHAUST

Debothezat Fans Div.
American Machine & Metals, Inc.
East Moline, Ill.

FANS, INDUCED DRAFT

Debothezat Fans Div.
American Machine & Metals, Inc.
East Moline, Ill.

FANS, ROOF VENTILATOR

Debothezat Fans Div.
American Machine & Metals, Inc.
East Moline, Ill.

FASTENERS

American Screw Co.
West Main St.
Willimantic, Conn.

Ramset Fastening System
12117 Berea Rd.
Cleveland 11, Ohio

Velocity Power Tool Co.
201 N. Braddock Ave.
Pittsburgh 8, Pa.

FILING DEVICES

Plan Hold Corp
5204 Chakemco St.
South Gate, Calif.

Ross-Martin Co.
428 East Fourth St.
Tulsa, Okla.
See advertisement page 7

FILLING EQUIPMENT

Bartelt Engineering Co.
1900 Harrison Ave.
Rockford, Ill.

Plan Hold Corp.
5204 Chakemco St.
South Gate, Calif.

The General Fireproofing Co.
Youngstown 1, Ohio

Momar Industries
Glider Blue Print Rack Div.
4323 West 32nd St.
Chicago 23, Ill.

Sales Service Machine Tool Co.
2363 University Ave.
St. Paul 14, Minn.

FILM

Eastman Kodak Co.
343 State St.
Rochester 4, N. Y.

FILTERS, AIR

American Felt Co.
Box 5
Glenville, Conn.

Fram Corp.
Providence 16, R. I.

Hankison Corp.
College & Pike
Canonsburg, Pa.

Purolator Products, Inc.
970 New Brunswick Ave.
Rahway, N. J.

Westinghouse Electric Corp.
Sturtevant Div.
Hyde Park
Boston 36, Mass.

FILTER, LIQUID

American Felt Co.
Box 5
Glenville, Conn.

Fram Corp.
Providence 16, R. I.

Graver Water Conditioning Co.
216 W. 14th St.
New York 11, N. Y.

The Hilliard Corp.
W. Fourth St.
Elmira, N. Y.

Newark Wire Cloth Co.
351 Verona Ave.
Newark 4, N. J.

Purolator Products, Inc.
970 New Brunswick Ave.
Rahway, N. J.

T. Shriver & Co., Inc.
815 Hamilton St.
Harrison, N. J.

FINISHED MACHINE PARTS

Amplex Div.
Chrysler Corp.
P. O. Box 2718
Detroit 31, Mich.

FIRE EXTINGUISHERS, EQUIP.

Fenwal, Inc.
Pleasant St.
Ashland, Mass.

Grinnell Co.
260 W. Exchange St.
Providence 1, R. I.

Walter Kidde & Co., Inc.
881 Main St.
Belleville 9, N. J.

FIRST AID CABINETS

General Scientific Equipment Co.
7516 Limekiln Pike
Philadelphia 50, Pa.

FLASHLIGHTS

Delta Electric Co.
Marion, Ind.

Nat'l. Carbon Co.
Div. Union Carbide Corp.
30 E. 42nd St.
New York 17, N. Y.

FLOOR COVERINGS, INDUSTRIAL

Surface Protection Co.
16799 Euclid Ave.
Cleveland 12, Ohio

FLOOR PROCESSING EQUIPMENT

Toledo Scale Co.
Telegraph Rd.
Toledo 1, Ohio

FLUORESCENT LAMPS

General Electric Co.
Nela Park
Cleveland 12, Ohio

Sylvania Electric Products, Inc.
1740 Broadway
New York 19, N. Y.

FLOW CONTROL SYSTEMS, METERS

Barton Instrument Corp.
580 Monterey Pass Rd.
Monterey Park, Calif.

B-I-F Industries, Inc.
345 Harris Ave.
Providence, R. I.

The Foxboro Co.
Foxboro, Mass.

The Hays Corp.
742 E. 8th St.
Michigan City 27, Mich.

Leupold & Stevens Instruments, Inc.
4445 NE Glisan St.
Portland 13, Ore.

McIntosh Equip. Corp.
15 Park Row
New York 38, N. Y.

Potter Aero Corp.
Route 22
Union, N. J.

Sparling Meter Co.
225 N. Temple City Blvd.
El Monte, Calif.

FOOD PROCESSING EQUIPMENT

J. H. Greer Co.
Wilmington, Mass.

The Mave Co.
251 Securities Bldg.
Seattle 1, Wash.

Read Standard
York, Pa.

FORK LIFT TRUCKS

The Elwell-Parker Electric Co.
4326 St. Clair
Cleveland 3, Ohio

Lamson Mobilift Corp.
835 S. E. Main St.
Portland 14, Ore.

FUEL OIL ADDITIVES

Universal Oil Products Co.
30 Algonquin Rd.
Des Plaines, Ill.

Western Chemical Co.
713 Washington St.
Kansas City 5, Mo.

FURNACES

Nyland Corp.
489 Fifth Ave.
New York 17, N. Y.

Von Brand
Filtering Recorders
Smokemeter Div.
Hopewell Junction, N. Y.

FURNACES, ENCLOSURES

Nyland Corp.
489 Fifth Ave.
New York 17, N. Y.

—G—

GAS BURNERS

The Anthony Co.
47-33 Fifth St.
Long Island City 1, N. Y.

The Engineer Co.
75 West St.
New York 6, N. Y.

Gordon & Piatt Co.
Winfield, Kansas

Hauck Mfg. Co.
124-136 Tenth St.
Brooklyn 15, N. Y.

GAUGES

Alemite
Div. Stewart-Warner Corp.
1826 Diversey Pkwy.
Chicago 14, Ill.

Ellison Draft Gage Co., Inc.
548 W. Monroe St.
Chicago 6, Ill.

Pacific Transducer Corp.
11836 W. Pico Blvd.
Los Angeles 64, Calif.

Penberthy Manufacturing Co.
1242 Holden Ave.
Detroit 2, Mich.

GEAR DRIVES

The Falk Corp.
3001 W. Canal St.
Milwaukee 1, Wis.

GEARS

Ohio Gear Co.
1333 E. 179th St.
Cleveland 10, Ohio

GENERATORS

Bogue Elec. Mfg. Co.
52 Iowa Ave.
Paterson 3, N. J.

Century Electric Co.
1806 Pine St.
St. Louis 3, Mo.

The Louis Allie Co.
427 E. Stewart St.
Milwaukee 1, Wis.

Hobart Brothers Co.
Hobart Square
Troy, Ohio

Homelite
Riverdale Ave.
Port Chester, N. Y.

D. W. Onan & Sons, Inc.
2515 University Ave., S. E.
Minneapolis 14, Minn.

Reliance Electric & Eng. Co.
24701 Euclid Ave.
Cleveland 17, Ohio

GENERATORS, INERT

Gas Atmospheres, Inc.
20011 West Lake Rd.
Cleveland 16, Ohio

GOGGLES

General Scientific Equipment Co.
7516 Limekiln Pike
Philadelphia 50, Pa.

United States Safety Service Co.
1535 Walnut St.
Kansas City 8, Mo.

GRADERS

The Galion Iron Works & Mfg. Co.
Galion, Ohio

GRAPHITES

Acheson Colloids Co.
1635 Washington Ave.
Port Huron, Mich.

Joseph Dixon Crucible
Jersey City 3, N. J.

GRATING

Hendrick Mfg. Co.
Carbondale, Pa.

Klemp Metal Grating Corp.
6601 S. Melvina Ave.
Chicago 38, Ill.

GRINDING MACHINES

The Carborundum Co.
Niagara Falls, N. Y.

Combustion Engineering, Inc.
200 Madison Ave.
New York 16, N. Y.

Marvel Equip. Corp.
215 Eagle St.
Brooklyn 22, N. Y.

Norton Co.
1 New Bond St.
Worcester 6, Mass.

—H—

HAMMERS, PILE DRIVING

Mississippi Valley Equipment Co.
1908 Railway Exchange Bldg.
St. Louis 1, Mo.

HEAT EXCHANGERS

Arrow Industrial Mfg. Co.
801 W. 21st St.
Box 9607
Tulsa, Okla.

Aimco Transaire Air-Cooled and Atmospheric Coolers

(Circle 24 on Inside Back Cover)

Bell & Gossett Co.
8200 N. Austin Ave.
Morton Grove, Ill.

Corning Glass Works
Corning, N. Y.

Foster Wheeler Corp.
666 Fifth Ave.
New York 19, N. Y.

The Friscom-Russell Co.
Massillon, Ohio,

J. H. Greer Co.
Wilmington, Mass.

Maryland Shipbuilding & Drydock Co.
P. O. Box 537
Baltimore, 3, Md.

Nat'l. Carbon Co.
Div. Union Carbide Corp.
30 E. 42nd St.
New York 17, N. Y.

Nooter Corp.
1400 S. Second St.
St. Louis 4, Mo.

Richmond Engineering Co. Inc.
P. O. Box 2 AC
Richmond, Va.

Speedline Div.
Horace T. Potts Co.
Erie Ave. & D St.
Philadelphia 34, Pa.

Struthers Wells Corp.
Warren, Pa.

Tranter Mfg., Inc.
735 E. Hazel St.
Lansing 9, Mich.

The Whitlock Mfg. Co.
W. Hartford 10, Conn.

HEAT EXCHANGER TUBES

Bridgeport Brass Co.
30 Grand St.
Bridgeport 2, Conn.

HEAT INSULATIONS

Refractory & Insulation Corp.
120 Wall St.
New York 5, N. Y.

HEAT TRANSFER

Arrow Industrial Mfg. Co.
801 W. 21st St.
Box 9607
Tulsa, Okla.

D. J. Murray Mfg. Co.
1002-1024 Third St.
Wausau, Wis.

Westinghouse Electric Corp.
Sturtevant Div.
Hyde Park
Boston 36, Mass.

HIGH FIDELITY EQUIPMENT

Allied Radio Corp.
100 N. Western Ave.
Chicago 90, Ill.
See advertisement page 9

Kahn Associates
93 Remsen St.
Brooklyn 1, N. Y.

HIGH VACUUM EQUIPMENT

NRC Equipment Corp.
160 Charlemont St.
Newton 61, Mass.

HIGH VACUUM GAUGES

NRC Equipment Corp.
160 Charlemont St.
Newton 61, Mass.

HIGH VACUUM PUMPS

NRC Equipment Corp.
160 Charlemont St.
Newton 61, Mass.

1958 PROFESSIONAL ENGINEERS' BUYERS GUIDE

HOISTS
Columbus McKinnon Chain Corp.
Fremont St.
Tonawanda, N. Y.

HOME WATER SYSTEMS
Red Jacket Mfg. Co.
P. O. Box 270
Davenport, Iowa

HONEYCOMB CONSTRUCTION
U. S. Propellers, Inc.
3270 E. Foothill Blvd.
Pasadena 8, Calif.

HOPPER FEEDERS
Aidlings, Inc.
1613 E. New York Ave.
Brooklyn 12, N. Y.

Syntron Co.
918 Lexington Ave.
Homer City, Pa.

HOSE
The Anchor Packing Co.
401 N. Broad St.
Phila. 8, Pa.

Flexaust Co.
100 Park Ave.
New York 17, N. Y.

Flexonics Corp.
1315 S. Third Ave.
Maywood, Ill.

Eugene B. Hauser
1620 Park Ave.
Hoboken, N. J.

Hewitt-Robins, Inc.
666 Glenbrook Rd.
Stamford, Conn.

Republic Rubber Div.
Lee Rubber & Tire Corp.
1410 Albert St.
Youngstown, Ohio

U. S. Flexible Tubing Co.
Drawer "C"
Bartlett, Ill.

The Weatherhead Co.
Ft. Wayne Div.
128 W. Washington Blvd.
Ft. Wayne, Ind.

HOSE ASSEMBLIES
Anchor Coupling Co., Inc.
342 N. Fourth St.
Libertyville, Ill.

HOSE, DUST COLLECTOR
Flexaust Co.
100 Park Ave.
New York 17, N. Y.

Flexonics Corp.
1315 S. Third Ave.
Maywood, Ill.

HOSE, VENTILATING
Flexaust Co.
100 Park Ave.
New York 17, N. Y.

Flexonics Corp.
1315 S. Third Ave.
Maywood, Ill.

HUMIDIFIERS
American Moistening Co.
260 W. Exchange St.
Providence 1, R. I.

HUMIDIFIERS, INDUSTRIAL
The Bahnson Co.
1001 S. Marshall St.
Winston-Salem 2, N. C.

HYDRAULIC EQUIPMENT
The Airoyal Co.
1990 Springfield Ave.
Maplewood, N. J.

Anthony Co.
End of Baker
Streator, Ill.

George L. Day Co., Inc.
1227-31 Niagara St.
Buffalo 13, N. Y.

Jackson-Walter Co.
2027 Arch St.
Philadelphia 3, Pa.

Rotary Lift Co.
Div. Dover Corp.
1054 Kansas St.
Memphis, Tenn.

The Rucker Co.
4700 San Pablo Ave.
Oakland, Calif.

Vonbee Co.
P. O. Box 538
Livingston, N. J.

The Weatherhead Co.
Ft. Wayne Div.
128 W. Washington Blvd.
Ft. Wayne, Ind.

HYDRAULIC EXTRUSION PRESSES
Sutton Engineering Co.
1st National Bank Bldg.
Pittsburgh 22, Pa.

—I—

INCINERATORS
Theodore J. Kauffeld, M.E., P.E.
150 Broadway
New York 38, N. Y.

Nyland Corp.
489 Fifth Ave.
New York 17, N. Y.

Winnen Incinerators
Bedford, Ohio

Von Brand
Filtering Recorders
Smokemeter Div.
Hopewell Junction, N. Y.

INDELIBLE INKS
Dri-Flo Manufacturing Co.
410 East Fifth St.
Royal Oak, Mich.

INDUSTRIAL EXPANSION JOINTS
Solar Aircraft Co.
2200 Pacific Highway
San Diego 12, Calif.

INDUSTRIAL INSULATORS
Baldwin Hill Co.
500 Breunig Ave.
Trenton, N. J.

INDUSTRIAL MARKING INKS
Dri-Flo Manufacturing Co.
410 East Fifth St.
Royal Oak, Mich.

INDUSTRIAL RESEARCH
Arthur D. Little, Inc.
30 Memorial Drive
Cambridge 42, Mass.

INDUSTRIAL VACUUMS
Lincoln Floor Machinery Co.
1106 Haskins Rd.
Bowling Green, Ohio

INFILTRATION GALLERY
Ranney Method Water Supplies, Inc.
P. O. Box 5415
841 Alton Ave.
Columbus 19, Ohio

INFRARED COMPONENTS & SYSTEMS
Farnsworth Electronic Co.
Fort Wayne, Ind.

INSTRUMENTS, PROCESS CONTROL
Bailey Meter Co.
1050 Ivanhoe Rd.
Cleveland 10, Ohio

Beckman
Process Instruments Div.
2500 Fullerton Rd.
Fullerton, Calif.

B-I-F Industries, Inc.
345 Harris Ave.
Providence, R. I.

A. W. Cash Co.
P. O. Box 551
Decatur, Ill.

Fischer & Porter Co.
13 Warminster Rd.
Hatboro, Pa.

The Foxboro Co.
Foxboro, Mass.

General Controls Co.
801 Allen Ave.
Glendale 1, Calif.

The Hays Corp.
742 E. 8th St.
Michigan City 27, Mich.

Kent-Moore Org. Inc.
28635 Mound Rd.
Warren, Mich.

Magnaflux Corp.
7300 W. Lawrence Ave.
Chicago 31, Ill.

Mine Safety Appliances Co.
201 N. Braddock Ave.
Pittsburgh 8, Pa.

Minneapolis-Honeywell
2753 4th Ave., S.
Minneapolis 8, Minn.

Weston Electrical Inst. Corp.
614 Frelinghuysen Ave.
Newark 12, N. J.

INSTRUMENTS, TESTING
Allied Radio Corp.
100 N. Western Ave.
Chicago 90, Ill.
See advertisement page 9

Associated Research Inc.
3758 W. Belmont
Chicago 18, Ill.

Baird-Atomic, Inc.
33 University Road
Cambridge 38, Mass.

J. C. Busch Co.
158 S. Barclay St.
Milwaukee 4, Wis.

Electronic Tube Corp.
1200 E. Mermaid Lane
Phila. 18, Pa.

Ellison Draft Gage Co., Inc.
548 W. Monroe St.
Chicago 6, Ill.

Endevco Corp.
161 E. California St.
Pasadena, Calif.

Engis Equip. Co.
431 S. Dearborn St.
Chicago 5, Ill.

Magnaflux Corp.
7300 W. Lawrence Ave.
Chicago 31, Ill.

Ruska Instrument Corp.
4607 Montrose Blvd.
Houston 6, Texas

Vectron, Inc.
1632 Trapelo Rd.
Waltham 54, Mass.

The Walpole Co.
100 Boylston St.
Boston 16, Mass.

Wareforms, Inc.
333 Sixth Ave.
New York 14, N. Y.

INTERCEPTORS (GASOLINE, GREASE & OIL)
Norman Boosey Mfg. Co.
P. O. Box H
Detroit 8, Mich.
See advertisement page 5

INTERCOMS
Allied Radio Corp.
100 N. Western Ave.
Chicago 90, Ill.
See advertisement page 9

Automatic Electric Co.
Northlake, Ill.

DuKane Corp.
St. Charles, Ill.

Executone, Inc.
415 Lexington Ave.
New York 17, N. Y.

Kahn Associates
93 Remsen St.
Brooklyn 1, N. Y.

Talk-A-Phone Co.
1512 So. Pulaski Rd.
Chicago 23, Ill.

IRRIGATION EQUIPMENT
The F. E. Myers & Bro. Co.
Orange St.
Ashland, Ohio

Sparling Meter Co.
225 N. Temple City Blvd.
El Monte, Calif.

—K—

KEY CABINETS AND SYSTEMS
P. O. Moore, Inc.
Glen Riddle, Pa.

—L—

LABORATORY APPARATUS
Bausch & Lomb Optical Co.
635 St. Paul St.
Rochester 2, N. Y.

R. Fuess, Inc.
250 West 104th St.
New York 25, N. Y.

Mast Development Co., Inc.
2212 East 12th St.
Davenport, Iowa

Soiltest, Inc.
4711 W. North Ave.
Chicago 39, Ill.

LABORATORY EQUIPMENT
Central Scientific Co.
1700 Irving Park Ave.
Chicago 13, Ill.

LAMPS, GERMICIDAL
General Electric Co.
Nela Park
Cleveland 12, Ohio

LAMPS, ULTRA-VIOLET
General Electric Co.
Nela Park
Cleveland 12, Ohio

LENSES, OPTICAL
American Optical Co.
Safety Products Div.
83 Mechanic St.
Southbridge, Mass.

Bausch & Lomb Optical Co.
635 St. Paul St.
Rochester 2, N. Y.

LEVELS
C. L. Berger & Sons, Inc.
37 Williams St.
Boston 19, Mass.

Compass Instrument & Optical Co., Inc.
104 East 25th St.
New York 10, N. Y.

Carl Heinrich Co.
711 Concord Ave.
Cambridge 38, Mass.

Kern Instruments, Inc.
120 Grand St.
White Plains, N. Y.

LEVER SWITCHES
General Control Co.
1200 Soldiers Field Rd.
Boston 34, Mass.

Micro Switch
Div. Minneapolis-Honeywell Regulator Co.
Freeport, Ill.

LIGHTING EQUIPMENT
Exide Industrial Div.
The Electric Storage Battery Co.
42 S. 15th St.
Philadelphia 2, Pa.

Crouse-Hinds Co.
Wolf St. at 7th N.
Syracuse, N. Y.

Gruber Brothers, Inc.
125 So. First St.
Brooklyn 11, N. Y.

The Strong Electric Corp.
87 City Park Ave.
Toledo 1, Ohio

Spotlights for Auditoriums, Arenas, Schools.
(Architects send for specification sheets)
(Circle 25 on Inside Back Cover)

The Superior Electric Co.
83 Laurel St.
Bristol, Conn.

Sylvania Electric Products, Inc.
1740 Broadway
New York 19, N. Y.

LINING MATERIALS, TANK
Carboline Co.
32 Hanley Industrial Ct.
St. Louis, Mo.

LININGS, CORROSION RESISTANT
Atlas Mineral Products Co.
Mertztown, Pa.

Carboline Co.
32 Hanley Industrial Ct.
St. Louis, Mo.

Haveg Industries, Inc.
900 Greenbank Road
Wilmington 8, Del.

LIQUEFIED PETROLEUM GAS PLANTS
N. Emerson Thomas & Assoc. Inc.
111 Quimby St.
Westfield, N. J.

J. F. Pritchard & Co. of Calif.
4625 Roanoke Pkwy.
Kansas City 12, Mo.

LIQUID LEVEL CONTROLS
Automation Products, Inc.
3030 Max Roy St.
Houston 24, Texas

Leupold & Stevens Instruments, Inc.
4445 N.E. Glisan St.
Portland 13, Ore.

McIntosh Equip. Corp.
15 Park Row
New York 38, N. Y.

Penberthy Mfg. Co.
1242 Holden Ave.
Detroit 2, Mich.

LIQUID LEVEL GAGES (direct reading)
Penberthy Manufacturing Co.
1242 Holden Ave.
Detroit 2, Mich.

LOCKERS, EMPLOYEE
Lyon Metal Products, Inc.
Aurora, Ill.

LOCOMOTIVES
Rogers Bros. Corp.
Albion, Pa.

LUBRICANTS
Acheson Colloids Co.
1635 Washington Ave.
Port Huron, Mich.

Alemite
Div. Stewart-Warner Corp.
1826 Diversey Pkwy.
Chicago 14, Ill.

Dow Corning Corp.
Midland, Mich.

LUBRICATION SYSTEMS
Alemite
Div. Stewart-Warner Corp.
1826 Diversey Pkwy.
Chicago 14, Ill.

The Farval Corp.
3300 E. 80th St.
Cleveland 4, Ohio

Gray Co., Inc.
56 Eleventh Ave., N.E.
Minneapolis 13, Minn.

—M—

MACHINE GUARDS
A & A Mfg. Co., Inc.
712 S. 12th St.
Milwaukee 4, Wis.

MACHINERY, COIL WINDING
Universal Winding Co.
P. O. Box 1605
Providence 1, R. I.

MACHINERY, SPECIAL
Aidlings, Inc.
1613 E. New York Ave.
Brooklyn 12, N. Y.

J. C. Busch Co.
158 S. Barclay St.
Milwaukee 4, Wis.

George L. Day Co., Inc.
1227-31 Niagara St.
Buffalo 13, N. Y.

Industrial Ovens, Inc.
13825 Triskett Rd.
Cleveland 11, Ohio

Jackson-Walter Co.
2027 Arch St.
Philadelphia 3, Pa.

Mast Development Co., Inc.
2212 East 12th St.
Davenport, Iowa

The Mave Co.
251 Securities Bldg.
Seattle 1, Wash.

D. J. Murray Mfg. Co.
1002-1024 Third St.
Wausau, Wis.

Piasecki Aircraft Corp.
International Airport
Island Rd.
Philadelphia 42, Pa.

Rockford Crescent Mfg. Co.
420 Buckbee St.
Rockford, Ill.

T A B Engineers, Inc.
777 N. Milwaukee Ave.
Chicago 22, Ill.

MACHINERY TEXTILE
Universal Winding Co.
P. O. Box 1605
Providence 1, R. I.

MAGNESIUM
The Dow Chemical Co.
Midland, Mich.

MAGNETIC AMPLIFIERS
Fidelity Instrument Corp.
1000 E. Boundary Ave.
York, Pa.

MARKING EQUIPMENT
Dri-Flo Manufacturing Co.
410 E. Fifth St.
Royal Oak, Mich.

MASONRY DRILLS
Holub Industries, Inc.
413 DeKalb Ave.
Sycamore, Ill.

Pennsylvania Drilling Co.
1205 Chartiers Ave.
Pittsburgh 6, Pa.

MASONRY REINFORCING
The Carter-Waters Corp.
2440 Pennway
Kansas City 8, Mo.

MATERIALS HANDLING EQUIPMENT
American Hoist & Derrick Co.
63 S. Robert St.
St. Paul 7, Minn.

Anchor Steel & Conveyor Co.
6906 Kingsley Ave.
Dearborn, Mich.

Buck Equipment Corp.
720 Anderson Ferry Rd.
Cincinnati 38, Ohio

The E. W. Buschman Co.
4363 Clifton Ave.
Cincinnati 32, Ohio

The Colson Corp.
Special Products Div.
440 Somerville Ave.
Somerville 32, Mass.

George L. Day Co., Inc.
1227-31 Niagara St.
Buffalo 13, N. Y.

The Fairbanks Co.
393 Lafayette St.
New York 3, N. Y.

Feedrail Corp.
1250 Barclay St.
New York 7, N. Y.

Hewitt-Robins, Inc.
666 Glenbrook Rd.
Stamford, Conn.

1958 PROFESSIONAL ENGINEERS' BUYERS GUIDE

MATERIALS HANDLING EQUIP. (CONT.)

Industrial East Co.
P. O. Box 561
Clifton, N. J.

International Conveyor & Washer Corp.
652 E. Fort St.
Detroit 26, Mich.

Lamson Mobilift Corp.
835 S. E. Main St.
Portland 14, Ore.

Logan Co.
200 Cabel St.
Louisville 6, Ky.

M-H Standard Corp.
515 Communipaw Ave.
Jersey City 4, N. J.

Mast Development Co., Inc.
2212 East 12th St.
Davenport, Iowa

The Mave Co.
251 Securities Bldg.
Seattle 1, Wash.

Palmer-Shile Co.
16700 Fullerton
Detroit 27, Mich.

Rotary Lift Co.
Div. Dover Corp.
1054 Kansas St.
Memphis, Tenn.

Saverman Bros., Inc.
608 S. 28th Ave.
Bellwood, Ill.

Syntron Co.
918 Lexington Ave.
Homer City, Pa.

Unistrut Products Co.
933 Washington Blvd.
Chicago 7, Ill.

MATERIALS, TESTING

Magnaflux Corp.
7300 W. Lawrence Ave.
Chicago 31, Ill.

Pacific Transducer Corp.
11836 W. Pico Blvd.
Los Angeles 64, Calif.

MEASURING & CONTROLLING INSTRUMENTS

Automation Products, Inc.
3030 Max Roy St.
Houston 24, Texas

Bailey Meter Co.
1050 Ivanhoe Rd.
Cleveland 10, Ohio

Baird-Atomic, Inc.
33 University Rd.
Cambridge 38, Mass.

Barton Instrument Corp.
580 Monterey Pass Rd.
Monterey Park, Calif.

Beckman
Process Instruments Div.
2500 Fullerton Rd.
Fullerton, Calif.

B-I-F Industries, Inc.
345 Harris Ave.
Providence, R. I.

R. Fuess, Inc.
250 W. 104th St.
New York 25, N. Y.

Minneapolis-Honeywell Regulator Co.
2753 4th Ave., So.
Minneapolis 9, Minn.

Potter Aero Corp.
Route 22
Union, N. J.

Taller & Copper, Inc.
75 Front St.
Brooklyn 1, N. Y.

Toledo Scale Co.
Telegraph Rd.
Toledo 1, Ohio

Vectron, Inc.
1632 Trapelo Rd.
Waltham 54, Mass.

Weston Electrical Inst. Corp.
614 Frelinghuysen Ave.
Newark 12, N. J.

Yale Associates
114 Everett Paine Blvd.
Marblehead, Mass.

MEASURING INSTRUMENTS

Alvin & Co., Inc.
Palisado Ave.
Windsor, Conn.
See advertisement page 6

Associated Research Inc.
3758 W. Belmont
Chicago 18, Ill.

Automation Products, Inc.
3030 Max Roy St.
Houston 24, Texas

Engis Equip. Co.
431 S. Dearborn St.
Chicago 5, Ill.

Wareforms, Inc.
333 Sixth Ave.
New York 14, N. Y.

MEASURING TAPES AND RULES

Lufkin Rule Co.
1730 Hess St.
Saginaw, Mich.

METAL HONEYCOMB SANDWICH STRUCTURES

Solar Aircraft Co.
2200 Pacific Highway
San Diego 12, Calif.

METAL SPINNING LATHES

Hepworth Machine Co., Inc.
42-11 Ninth St.
Long Island 1, N. Y.

METERS

Allied Radio Corp.
100 N. Western Ave.
Chicago 90, Ill.
See advertisement page 9

General Electric Co.
Main St.
Somersworth, N. H.

Hagan Chemical & Controls, Inc.
323 Fourth Ave.
Pittsburgh 30, Pa.

Neptune Meter Co.
19 W. 50th St.
New York 20, N. Y.

MICROMETERS

Lufkin Rule Co.
1730 Hess St.
Saginaw, Mich.

MILLING ATTACHMENTS FOR LATHES

Alva Allen Industries
35 & 13 Jct.
Clinton, Mo.

MISSILE GUIDANCE EQUIPMENT

Farnsworth Electronic Co.
Fort Wayne, Ind.

MOLDED PLASTICS

General Electric Co.
Plastics Department
2200 N. 22nd St.
Decatur, Ill.

—N—

NAME PLATES

Metalcraft, Inc.
1619 S. Federal
Mason City, Iowa

NAME PLATES, DECALCOMANIA

The Meyercord Co.
5323 W. Lake St.
Chicago 44, Ill.

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OFFICE EQUIPMENT

Feedrail Corp.
1250 Barclay St.
New York 7, N. Y.

Momar Industries
Glider Blue Print Rack Div.
4323 West 32nd St.
Chicago 23, Ill.

Peerless Photo Products, Inc.
Route 25A
Shoreham, N. Y.

Plan Hold Corp.
5204 Chakemco St.
South Gate, Calif.

Pitney-Bowes, Inc.
Walnut & Pacific Sts.
Stamford, Conn.

Remington Rand
315 Fourth Ave.
New York, N. Y.

OFFICE FURNITURE

The General Fireproofing Co.
Youngstown 1, Ohio

Kahn Associates
93 Remsen St.
Brooklyn 1, N. Y.

Momar Industries
Glider Blue Print Rack Div.
4323 West 32nd St.
Chicago 23, Ill.

Remington Rand
315 Fourth Ave.
New York, N. Y.

OFFICE SUPPLIES

Industry Division
Accounts Supply House
305 Canal St.
New York City 13, N. Y.

OIL BURNERS

The Anthony Co.
47-33 Fifth St.
L. I. City 1, N. Y.

The Engineer Co.
75 West St.
New York 6, N. Y.

Enterprise Engine & Machinery Co.
18th & Florida Sts.
San Francisco, Calif.

Hauck Mfg. Co.
124-136 Tenth St.
Brooklyn 15, N. Y.

Von Brand
Filtering Recorders
Smokemeter Div.
Hopewell Junction, N. Y.

OIL (LUBRICATING)

Acheson Colloids Co.
1635 Washington Ave.
Port Huron, Mich.

OVENS, BAND

J. H. Greer Co.
Wilmington, Mass.

OVENS, INDUSTRIAL

Industrial Ovens, Inc.
13825 Triskett Rd.
Cleveland 11, Ohio

The Kirk & Blum Mfg. Co.
3134 Forrer St.
Cincinnati 9, Ohio

The R. C. Mahon Co.
6565 East 8 Mile Rd.
Detroit 34, Mich.

J. O. Ross Engineering Corp.
444 Madison Ave.
New York 22, N. Y.

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PACKAGING EQUIPMENT

Bartelt Engineering Co.
1900 Harrison Ave.
Rockford, Ill.

The Rucker Co.
4700 San Pablo Ave.
Oakland, Calif.

T A B Engineers, Inc.
777 N. Milwaukee Ave.
Chicago 22, Ill.

PACKAGE STEAM GENERATOR BOILERS

Ames Iron Works, Inc.
Oswego, N. Y.

PACKING-MECHANICAL

The Anchor Packing Co.
401 N. Broad St.
Phila. 8, Pa.

Johns-Manville
22 East 40th St.
New York 16, N. Y.

Republic Rubber Div.
Lee Rubber & Tire Corp.
1410 Albert St.
Youngstown, Ohio

Westinghouse Air Brake Co.
Industrial Products Div.
Box 36
Wilmerding, Pa.

PAINT SPRAYERS
Gray Co., Inc.
56 Eleventh Ave., N.E.
Minneapolis 13, Minn.

PARTITIONS
Unistrut Products Co.
933 Washington Blvd.
Chicago 7, Ill.

PAVING JOINT SEALERS & EXPANSION JOINTS
Presstite-Keystone Engineering Products Co.
3738 Chouteau Ave.
St. Louis, Mo.

PAVING MATERIALS
Jay Co.
2222 S. 3rd St.
Columbus 7, Ohio

PENCILS, ARTIST
Richard Best Pencil Co.
Springfield, N. J.

Faber, Eberhard Pencil Co.
Crestwood
Wilkes-Barre, Pa.

PENCILS, DRAFTING
Richard Best Pencil Co.
Springfield, N. J.

Faber, Eberhard Pencil Co.
Crestwood
Wilkes-Barre, Pa.

Swan Pencil Co., Inc.
221 Fourth Ave.
New York 3, N. Y.
See advertisement page 5

PENCILS, PASTEL
Swan Pencil Co., Inc.
221 Fourth Ave.
New York 3, N. Y.
See advertisement page 5

PENS, DRAFTING
Ozalid Div.
General Aniline & Film Corp.
19 Ansco Rd.
Johnson City, N. Y.

PERMANENT METAL FILTERS
Amplex Div.
Chrysler Corp.
P. O. Box 2718
Detroit 31, Mich.

PHOTOCOPIERS
American Photocopy Equip. Co.
1920 W. Peterson Ave.
Chicago 26, Ill.

Eastman Kodak Co.
343 State St.
Rochester 4, N. Y.

Peerless Photo Products, Inc.
Route 25A
Shoreham, N. Y.

Remington Rand
Sperry Rand Corp.
315 Fourth Ave.
New York 10, N. Y.

PHOTOELECTRIC CELLS
International Rectifier Corp.
1521 E. Grand Ave.
El Segundo, Calif.

PHOTO PROCESSING EQUIPMENT
Peck & Harvey Mfg. Corp.
5650 N. Western Ave.
Chicago 45, Ill.

PIGMENTS, ORGANIC
Holland Color & Chemical Co.
492 Douglas Ave.
Holland, Mich.

PILING, SHEET STEEL
Mississippi Valley Equipment Co.
1908 Railway Exchange Bldg.
St. Louis 1, Mo.

PIPE, ALUMINUM
Harvey Aluminum
19200 S. Western Ave.
Torrance, Calif.

PIPE FITTINGS, COMPRESSION
Dresser Mfg. Div.
Bradford, Pa.

PIPE FITTINGS & FLANGES WELDING
The Babcock & Wilcox Co.
Tubular Products Div.
Beaver Falls, Pa.

Dresser Mfg. Div.
Bradford, Pa.

Grinnell Co.
260 W. Exchange St.
Providence 1, R. I.

Kraloy Plastic Pipe Co., Inc.
4720 E. Washington Blvd.
Los Angeles 22, Calif.

Ladish Co.
5481 S. Packard Ave.
Cudahy, Wis.

Speedline Div.
Horace T. Potts Co.
Erie Ave. & D St.
Philadelphia 34, Pa.

Walworth Co.
60 E. 42nd St.
New York 17, N. Y.

PIPE, GLASS
Corning Glass Works
Corning, N. Y.

PIPE, IRON
U. S. Pipe & Foundry Co.
3300 1st Ave., N.
Birmingham 2, Ala.

PIPE, PLASTIC, POLYETHYLENE
Orangeburg Mfg. Co.
375 Park Ave.
New York 22, N. Y.

PIPE, STEEL
Columbia-Geneva Div.
United States Steel Corp.
120 Montgomery St.
San Francisco 6, Calif.

PIPE, STEEL, SPIRAL WELDED
Naylor Pipe Co.
1230 E. 92nd St.
Chicago 19, Ill.

PLASTIC COATED TUBINGS
Irvington Division
Minnesota Mining & Mfg. Co.
6 Argyle Terrace
Irvington 11, N. J.

PLASTIC PIPE
Kraloy Plastic Pipe Co., Inc.
4720 E. Washington Blvd.
Los Angeles 22, Calif.

PLASTICS
Chemical Development Corp.
Danvers, Mass.

The Dow Chemical Co.
Midland, Mich.

Durez Plastics Div.
Hooker Electrochemical Co.
1969 Walck Rd.
N. Tonawanda, N. Y.

Kraloy Plastic Pipe Co., Inc.
4720 E. Washington Blvd.
Los Angeles 22, Calif.

Minnesota Mining & Mfg. Co.
900 Bush St.
St. Paul 6, Minn.

Nopco Chemical Co.
Harrison, N. J.

Polyplastex United, Inc.
870 Springfield Rd.
Union, N. J.

POLYESTER RESINS
Durez Plastics Div.
Hooker Electrochemical Co.
1969 Walck Rd.
N. Tonawanda, N. Y.

Hooker Electrochemical Co.
26 Iroquois St.
Niagara Falls, N. Y.

Polyplastex United, Inc.
870 Springfield Rd.
Union, N. J.

POSITIONERS
Westinghouse Air Brake Co.
Industrial Products Div.
Box 36
Wilmerding, Pa.

POWERED METALS
New Jersey Zinc Co.
160 Front St.
New York 38, N. Y.

POWER CAPACITORS
Tobe Deutschmann Corp.
Providence Highway
Norwood, Mass.

POWER, SUPPLIES
N J E Corp.
345 Carnegie Ave.
Kenilworth, N. J.

POWER TOOL, ELECTRIC
Skil Corp.
5033 Elston Ave.
Chicago 30, Ill.

POWER TRANSMISSION EQUIP.
Chain Belt Co.
4701 W. Greenfield Ave.
Milwaukee 1, Wis.

Whitney Chain Co.
237 Hamilton St.
Hartford 2, Conn.

PRECISION CASTINGS
Electric Steel Foundry
2141 N. W. 25th
Portland 13, Ore.

Eugene B. Hauser
1620 Park Ave.
Hoboken, N. J.

Nelson Electric Mfg. Co.
P. O. Box 5385
Tulsa, Okla.

Pabcast, Inc.
355 West Olive St.
Gardena, Calif.

PRECISION INSTRUMENTS
Kegelman Bros.
County Line Rd.
Huntingdon Valley, Pa.

Ruska Instrument Corp.
4607 Montrose Blvd.
Houston 6, Texas

Yale Associates
114 Everett Paine Blvd.
Marblehead, Mass.

PRESERVATIVES
Protection Products Mfg. Co.
2305 Superior Ave.
Kalamazoo, Mich.

PRESSES, PUNCH
Alva Allen Industries
35 & 13 Jct.
Clinton, Mo.

Sales Service Machine Tool Co.
2363 University Ave.
St. Paul 14, Minn.

PRESSES, SPECIAL
George L. Day Co., Inc.
1227-31 Niagara St.
Buffalo 13, N. Y.

PRESSURE SENSITIVE TAPES
Behr-Manning Co.
Troy, N. Y.

Minnesota Mining & Mfg. Co.
900 Bush St.
St. Paul 6, Minn.

PRESSURE VESSELS
Graver Tank & Mfg. Co., Inc.
East Chicago, Ind.

Nooter Corp.
1400 S. Second St.
St. Louis 4, Mo.

Richmond Engineering Co., Inc.
P. O. Box 2 AC
Richmond, Va.

Struthers Wells Corp.
Warren, Pa.

Westinghouse Air Brake Co.
Industrial Products Div.
Box 36
Wilmerding, Pa.

The Whitlock Mfg. Co.
W. Hartford 10, Conn.

1958 PROFESSIONAL ENGINEERS' BUYERS GUIDE

PROCESS EQUIPMENT
George L. Day Co., Inc.
1227-31 Niagara St.
Buffalo 13, N. Y.

PROJECTION EQUIPMENT
The Strong Electric Corp.
87 City Park Ave.
Toledo 1, Ohio

PROPANE GAS PLANTS
N. Emerson Thomas & Assoc. Inc.
111 Quimby St.
Westfield, N. J.

PROTECTIVE COATINGS
Carboline Co.
32 Hanley Industrial Ct.
St. Louis, Mo.

PROTECTIVE SPECTACLES
United States Safety Service Co.
1535 Walnut St.
Kansas City 8, Mo.

PUBLIC ADDRESS EQUIPMENT
Allied Radio Corp.
100 N. Western Ave.
Chicago 90, Ill.
See advertisement page 9

Electronic Engineering Co.
362 W. Bowery St.
Akron 7, Ohio

PUMPS
American-Marsh Pumps, Inc.
60 Capital Ave., N.E.
Battle Creek, Mich.

The American Well Works
100 N. Broadway
Aurora, Ill.

Aurora Pump Div.
The New York Air Brake Co.
41 Loucks St.
Aurora, Ill.

Bell & Gossett Co.
8200 N. Austin Ave.
Morton Grove, Ill.

Canton Stoker Corp.
Andrew Place, S.W.
Canton, Ohio

Chicago Pump Co.-Subsidiary of Food Machinery & Chemical Corp.
622 Diversey Parkway
Chicago 14, Ill.

Fairbanks, Morse & Co.
600 So. Michigan Ave.
Chicago 19, Ill.

Homelite
Riverdale Ave.
Port Chester, N. Y.

The Jaeger Machine Co.
550 W. Spring St.
Columbus 16, Ohio

Johnston Pump Co.
3272 Foothill Blvd.
Pasadena, Calif.

Kenco Pump Div.
1305 Oberlin Ave.
Lorain, Ohio

The F. E. Myers & Bro. Co.
Orange St.
Ashland, Ohio

Nagle Pumps, Inc.
1249 S. Center Ave.
Chicago Heights, Ill.

Pennsylvania Drilling Co.
1205 Chartiers Ave.
Pittsburgh 6, Pa.

Red Jacket Mfg. Co.
P. O. Box 270
Davenport, Iowa

Warren Pumps, Inc.
574 Bridges Ave.
Warren, Mass.

PUMPS, DIAPHRAGM
T. Shriver & Co., Inc.
815 Hamilton St.
Harrison, N. J.

PUMPS, HIGH VACUUM
Central Scientific Co.
1700 Irving Park Ave.
Chicago 13, Ill.

PUMPS (JET OPERATED)
Penberthy Manufacturing Co.
1242 Holden Ave.
Detroit 2, Mich.

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RADAR EQUIPMENT
Eugene B. Hauser
1620 Park Ave.
Hoboken, N. J.

The W. L. Maxson Corp.
475 Tenth Ave.
New York 18, N. Y.

RADIATORS
Arrow Industrial Mfg. Co.
801 W. 21st St.
Box 9607
Tulsa, Okla.

RADIO APPARATUS
Allied Radio Corp.
100 N. Western Ave.
Chicago 90, Ill.
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RADIO EQUIPMENT
Allied Radio Corp.
100 N. Western Ave.
Chicago 90, Ill.
See advertisement page 9

Tobe Deutschmann Corp.
Providence Hwy.
Norwood, Mass.

RADIO INTERFERENCE SHIELDING
Hallett Mfg. Co.
5910 Bowcroft St.
Los Angeles 16, Calif.

RADIO PARTS
Allied Radio Corp.
100 N. Western Ave.
Chicago 90, Ill.
See advertisement page 9

RAILWAY EQUIPMENT
Mississippi Valley Equipment Co.
1908 Railway Exchange Bldg.
St. Louis 1, Mo.

REAMERS
Goddard & Goddard Co.
P. O. Box 68
Brightmoor Sta.
Detroit 23, Mich.

RECORDERS, TAPE
Allied Radio Corp.
100 N. Western Ave.
Chicago 90, Ill.
See advertisement page 9

RECORDING EQUIPMENT
Allied Radio Corp.
100 N. Western Ave.
Chicago 90, Ill.
See advertisement page 9

RECTIFIERS, POWER
Allied Radio Corp.
100 N. Western Ave.
Chicago 90, Ill.
See advertisement page 9

American Rectifier Corp.
93 Lafayette St.
New York 13, N. Y.

International Rectifer Corp.
1521 E. Grand Ave.
El Segundo, Calif.

The Strong Electric Corp.
87 City Park Ave.
Toledo 1, Ohio

REFRACTORIES
Johns-Manville
22 East 40th St.
New York 16, N. Y.

Norton Co.
1 New Bond St.
Worcester 6, Mass.

Refractory & Insulation Corp.
120 Wall St.
New York 5, N. Y.

Wellsville Firebrick Co.
Wellsville, Mo.

REFRIGERANTS
E. I. du Pont de Nemours & Co., Inc.
Wilmington 98, Del.

REFRIGERATION EQUIPMENT
Carrier Corp.
300 S. Gieddes St.
Syracuse 1, N. Y.

Dole Refrigerating Co.
5910 N. Pulaski Rd.
Chicago 30, Ill.

Fowler Equipment Co.
732 N. Highland Ave.
Aurora, Ill.
Designers & Mfgr's custom built Comm. Refrigerators
(Circle 26 on Inside Back Cover)

Ed. Friedrich, Inc.
1117 East Commerce
San Antonio 3, Texas

Gas Atmospheres, Inc.
20011 West Lake Rd.
Cleveland 16, Ohio

D. W. Onan & Sons, Inc.
2515 University Ave., S.E.
Minneapolis 14, Minn.

REGULATORS, PRESSURE & TEMPERATURE
Clark Mfg. Co.
1830 E. 38th St.
Cleveland 14, Ohio

Conoflow Corp.
2100 Arch St.
Philadelphia 3, Pa.

Leslie Co.
Lyndhurst, N. J.

Minneapolis-Honeywell Regulator Co.
2753 4th Ave., So.
Minneapolis 9, Minn.

Sarco Co., Inc.
Sarcotherm Controls, Inc.
635 Madison Ave.
New York 22, N. Y.

Vonbee Co.
P. O. Box 538
Livingston, N. J.

Westinghouse Air Brake Co.
Industrial Products Div.
Box 36
Wilmerding, Pa.

REGULATORS, VOLTAGE
Fidelity Instrument Corp.
1000 E. Boundary Ave.
York, Pa.

General Radio Co.
275 Massachusetts Ave.
Cambridge 39, Mass.

REINFORCED "B" STAGE EPOXY
Polyplastex United, Inc.
870 Springfield Rd.
Union, N. J.

REINFORCED "B" STAGE POLYESTER
Polyplastex United, Inc.
870 Springfield Rd.
Union, N. J.

REINFORCEMENT
Wire Reinforcement Institute Inc.
1049 National Press Bldg.
Washington 4, D. C.

REINFORCEMENT, WIRE FABRIC
Wire Reinforcement Institute Inc.
1049 National Press Bldg.
Washington 4, D. C.

RELAYS
Allied Radio Corp.
100 N. Western Ave.
Chicago 90, Ill.
See advertisement page 9

Elgin National Watch Co.
107 National St.
Elgin, Ill.

Mercury Contacts, Inc.
Box 615
Far Hills Station
Dayton 19, Ohio

REPRODUCTION, MACH. & MATER.

Peerless Photo Products Inc.
Route 25A
Shoreham, N. Y.

RESEARCH CONSULTANTS

Arthur D. Little, Inc.
50 Memorial Drive
Cambridge 42, Mass.

REFRACTORS

The Babcock & Wilcox Co.
161 E. 42nd St.
New York 17, N. Y.

RESISTORS

Allied Radio Corp.
100 N. Western Ave.
Chicago 90, Ill.
See advertisement page 9

The Carborundum Co.
Niagara Falls, N. Y.

General Radio Co.
275 Massachusetts Ave.
Cambridge 39, Mass.

International Resistance Co.
401 N. Broad St.
Philadelphia 8, Pa.

ROAD BUILDING EQUIPMENT

Davey Compressor Co.
Kent, Ohio

The Galion Iron Works & Mfg. Co.
South St.
Galion, Ohio

Iowa Manufacturing Co.
916-16th St., N.E.
Cedar Rapids, Iowa

Jay Co.
2222 S. 3rd St.
Columbus 7, Ohio

Koehring Div.
Koehring Co.
3026 W. Concordia Ave.
Milwaukee 16, Wis.

Kolman Mfg. Co.
W. 12th St. Road
Sioux Falls, S. Dak.

Worthington Corp.
421 Worthington Ave.
Belleville 9, N. J.

ROCK BITS & DRILL STEELS

Atlas Copco Pacific Inc.
930 Brittan Ave.
San Carlos, Calif.

ROCKET ENGINES

Von Brand
Filtering Recorders
Smokemeter Div.
Hopewell Junction, N. Y.

ROCKET POWER PLANTS

Bell Aircraft Corp.
P. O. Box 1
Buffalo 5, N. Y.

ROLLER LEVELERS

Stanat Manufacturing Co., Inc.
525 Shames Dr.
Westbury, L. I., N. Y.

ROLLING MILLS

Stanat Manufacturing Co., Inc.
525 Shames Dr.
Westbury, L. I., N. Y.

ROLLED RINGS

Ladish Co.
5481 S. Packard Ave.
Cudahy, Wis.

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SAFETY DEVICES

American Optical Co.
Safety Products Div.
83 Mechanic St.
Southbridge, Mass.

Von Brand
Filtering Recorders
Gas Sampler Div.
Hopewell Junction, N. Y.

SAFETY EQUIPMENT

American Optical Co.
Safety Products Div.
83 Mechanic St.
Southbridge, Mass.

Lehigh Safety Shoe Co.
First & Minor Sts.
Emmaus, Pa.

Mine Safety Appliances Co.
201 N. Braddock Ave.
Pittsburgh 8, Pa.

United States Safety Service Co.
1535 Walnut St.
Kansas City 8, Mo.

The Walpole Co.
100 Boylston St.
Boston 16, Mass.

SAFETY EYEWEAR

Bausch & Lomb Optical Co.
635 St. Paul St.
Rochester 2, N. Y.

SAWS

Homelite
Riverdale Ave.
Port Chester, N. Y.

Sales Service Machine Tool Co.
2363 University Ave.
St. Paul 14, Minn.

Thor Power Tool Co.
Prudential Plaza
Chicago 1, Ill.

SAWS, ELECTRIC

The Black & Decker Mfg. Co.
E. Pennsylvania Ave.
Towson 4, Md.

Skil Corp.
5033 Elston Ave.
Chicago 30, Ill.

SCALES

Fairbanks, Morse & Co.
600 So. Michigan Ave.
Chicago 19, Ill.

The Howe Scale Co.
Strongs Ave.
Rutland, Vt.

Toledo Scale Co.
Telegraph Rd.
Toledo 1, Ohio

SCALES, POSTAL

Pitney-Bowes, Inc.
Walnut & Pacific Sts.
Stamford, Conn.

SCIENTIFIC INSTRUMENTS

Baird-Atomic, Inc.
33 University Rd.
Cambridge 38, Mass.

Beckman
Process Instruments Div.
2500 Fullerton Rd.
Fullerton, Calif.

Central Scientific Co.
1700 Irving Park Ave.
Chicago 13, Ill.

Endevco Corp.
161 E. California St.
Pasadena, Calif.

R. Fuess, Inc.
250 W. 104th St.
New York 25, N. Y.

Roy A. Martin Co.
809 Wellesley Dr., N.W.
Atlanta 5, Ga.

Ruska Instrument Corp.
4607 Montrose Blvd.
Houston 6, Texas

Von Brand
Filtering Recorders
Gas Sampler Div.
Hopewell Junction, N. Y.

SCREENS, VIBRATING

Productive Equip. Corp.
2926 W. Lake St.
Chicago 12, Ill.

SEWAGE TREATMENT MATERIALS

The American Well Works
100 N. Broadway
Aurora, Ill.

Chicago Pump Co.-Subsidiary of Food Machinery & Chemical Corp.
622 Diversey Parkway
Chicago 14, Ill.

FX-Lab Mfg. Co.
77 Okner Parkway
Livingston, N. J.

Pacific Flush Tank Co.
4241 Ravenswood Ave.
Chicago 13, Ill.

The Weinman Pump Mfg. Co.
290 Spruce St.
Columbus 8, Ohio

SEWERAGE

The Weinman Pump Mfg. Co.
290 Spruce St.
Columbus 8, Ohio

SHAFT COUPLINGS

The Falk Corp.
3001 W. Canal St.
Milwaukee 1, Wis.

SHAFTING, FLEXIBLE

Marvel Equip. Corp.
215 Eagle St.
Brooklyn 22, N. Y.

SHEET METAL

The Kirk & Blum Mfg. Co.
3134 Forrer St.
Cincinnati 9, Ohio

Piasecki Aircraft Corp.
International Airport
Island Rd.
Philadelphia 42, Pa.

SHELVING, ADJUSTABLE STEEL

Lyon Metal Products, Inc.
Aurora, Ill.

SHOES, SAFETY

Lehigh Safety Shoe Co.
First & Minor Sts.
Emmaus, Pa.

SIEVES, TESTING

Newark Wire Cloth Co.
351 Verona Ave.
Newark 4, N. J.

SILOS

The Marietta Concrete Corp.
Marietta, Ohio

SILOS, INDUSTRIAL

Graver Tank & Mfg. Co., Inc.
East Chicago, Ind.

SLEEVES, PLIABLE PROTECTIVE

A & A Mfg. Co., Inc.
712 S. 12th St.
Milwaukee 4, Wis.

SLIDE RULES

Paul S. Morton Engineering Service
P. O. Box 146
5131 Meadowlark Lane
Kalamazoo, Mich.

SLINGS, WIRE ROPE

American Chain & Cable Co., Inc.
929 Connecticut Ave.
Bridgeport 2, Conn.

SLITTERS

Stanat Manufacturing Co., Inc.
525 Shames Dr.
Westbury, L. I., N. Y.

SMOKE CONTROL SYSTEMS

Von Brand
Filtering Recorders
Smokemeter Div.
Hopewell Junction, N. Y.

Wheelabrator Corp.
1408 S. Byrkit
Mishawaka, Ind.

SOIL SAMPLING EQUIPMENT

Pennsylvania Drilling Co.
1205 Chartiers Ave.
Pittsburgh 6, Pa.

Soiltest, Inc.
4711 W. North Ave.
Chicago 39, Ill.

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SOIL SAMPLING EQUIP. (CONT.)

Sprague & Henwood, Inc.
221 W. Olive St.
Scranton, Pa.

SOIL TESTING APPARATUS

Soiltest, Inc.
4711 W. North Ave.
Chicago 39, Ill.

SOLVENTS DEGREASING

Detrex Chemical Industries, Inc.
P. O. Box 501
Detroit 32, Mich.

SOUND SYSTEMS

Allied Radio Corp.
100 N. Western Ave.
Chicago 90, Ill.
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Executone, Inc.
415 Lexington Ave.
New York 17, N. Y.

SPEED REDUCERS

Ohio Gear Co.
1333 E. 179th St.
Cleveland 10, Ohio

STAINLESS STEEL

Allegheny Ludlum Steel Corp.
Oliver Bldg.
Pittsburgh 22, Pa.

Armco Steel Corp.
703 Curtis St.
Middletown, Ohio

The Babcock & Wilcox Co.
Tubular Products Div.
Beaver Falls, Pa.

The Carpenter Steel Co.
Reading, Pa.

The Timken Roller Bearing Co.
1835 Dueber Ave., S.W.
Canton 6, Ohio

U. S. Steel Supply
Div., United States Steel Corp.
208 S. LaSalle St.
Chicago 4, Ill.

Williams & Co., Inc.
901 Pennsylvania Ave.
Pittsburgh 33, Pa.

STEAM TRAPS

Clark Mfg. Co.
1830 E. 38th St.
Cleveland 14, Ohio

Coe Manufacturing Co.
Banks St.
Painesville, Ohio

STEEL CASTINGS

The Falk Corp.
3001 W. Canal St.
Milwaukee 1, Wis.

STEEL FORMS FOR TUNNELS, SEWERS AND SHAFTS

Mayo Tunnel & Mine Equipment
P. O. Box 1413
Lancaster, Pa.

STEEL (other than structural)

Allegheny Ludlum Steel Corp.
Oliver Bldg.
Pittsburgh 22, Pa.

Armco Steel Corp.
703 Curtis St.
Middletown, Ohio

Columbia-Geneva
Div. United States Steel Corp.
120 Montgomery St.
San Francisco 6, Calif.

Jones & Laughlin Steel Corp.
3 Gateway Center
Pittsburgh 30, Pa.

U. S. Steel Supply
Div., United States Steel Corp.
208 S. La Salle St.
Chicago 4, Ill.

STOKERS

Canton Stoker Corp.
Andrew Place, S.W.
Canton, Ohio

Combustion Engineering Inc.
200 Madison Ave.
New York 16, N. Y.

Erie City Iron Works
1422 East Ave.
Erie, Pa.

The James Leffel & Co.
426 East St.
Springfield, Ohio

STORAGE EQUIPMENT

Lyon Metal Products, Inc.
Aurora, Ill.

STORAGE RACKS

M-H Standard Corp.
515 Communipaw Ave.
Jersey City 4, N. J.

STRAIGHTENING MACHINES

Sutton Engineering Co.
1st National Bank Bldg.
Pittsburgh 22, Pa.

STRAINERS

Clark Mfg. Co.
1830 E. 38th St.
Cleveland 14, Ohio

STRAINERS, DUPLEX

The Anthony Co.
47-33 Fifth St.
L. I. City 1, N. Y.

STRAINERS FOR STEAM, AIR, GAS AND LIQUID

Leslie Co.
Lyndhurst, N. J.

SUPPRESSORS

Hallett Mfg. Co.
5910 Bowcroft St.
Los Angeles 16, Calif.

Westinghouse Air Brake Co.
Industrial Products Div.
Box 36
Wilmerding, Pa.

SURVEYING INSTRUMENTS

C. L. Berger & Sons, Inc.
37 Williams St.
Boston 19, Mass.

Compass Instrument & Optical Co., Inc.
104 East 25th St.
New York 10, N. Y.

Carl Heinrich Co.
711 Concord Ave.
Cambridge 38, Mass.

Kegelman Bros.
County Line Rd.
Huntingdon Valley, Pa.

Kern Instruments Inc.
120 Grand St.
White Plains, N. Y.

SWIMMING POOLS, SUPPLIES & EQUIPMENT

Air Placement Equipment Co.
1009 W. 24th St.
Kansas City 8, Mo.

Allyn Chemical Co.
4537 Mayfield Rd.
Cleveland 21, Ohio

Norman Boosey Mfg. Co.
P. O. Box H
Detroit 8, Mich.
See advertisement page 5

W. A. Taylor & Co.
7300 York Rd.
Baltimore 4, Md.

SWITCHES, ELECTRICAL

Bradley Co. Inc.
3341 Arch St.
Philadelphia 4, Pa.

Crouse-Hinds Co.
Wolf St. at 7th N.
Syracuse, N. Y.

Cutler-Hammer, Inc.
315 N. 12th St.
Milwaukee 1, Wis.

Mercury Contacts, Inc.
Box 615,
Far Hills Sta.
Dayton 19, Ohio

Micro Switch
Div. Minneapolis-Honeywell Regulator Co.
Freeport, Ill.

Nelson Electric Mfg. Co.
P. O. Box 5385
Tulsa, Okla.

—T—

TANKS, CLEANING

W. E. Caldwell Co.
2001 Brook St.
Louisville 8, Ky.

TANKS, STORAGE

Airtherm Mfg. Co.
700 S. Spring Ave.
St. Louis 10, Mo.

W. E. Caldwell Co.
2001 Brook St.
Louisville 8, Ky.

Graver Tank & Mfg. Co., Inc.
East Chicago, Ind.

Nooter Corp.
1400 S. Second St.
St. Louis 4, Mo.

Richmond Engineering Co., Inc.
P. O. Box 2 AC
Richmond, Va.

TAPERED ROLLER BEARINGS

The Timken Roller Bearing Co.
1835 Dueber Ave., S. W.
Canton 6, Ohio

TAPS

John Bath & Co., Inc.
10 Mann St.
Worcester 2, Mass.

TELEPHONE EQUIPMENT

General Control Co.
1200 Soldiers Field Rd.
Boston 34, Mass.

TEMPERATURE INDICATING COATINGS

Tempil Corp.
132 W. 22nd St.
New York 11, N. Y.

TEMPERATURE INDICATING CRAYONS

Tempil Corp.
132 W. 22nd St.
New York 11, N. Y.

TEMPERATURE INDICATING PELLETS

Tempil Corp.
132 W. 22nd St.
New York 11, N. Y.

TEMPERATURE INDICATORS

Fenwal, Inc.
Pleasant St.
Ashland, Mass.

Pacific Transducer Corp.
11836 W. Pico Blvd.
Los Angeles 64, Calif.

Weston Electrical Inst. Corp.
Daystrom, Inc.
614 Frelinghuysen Ave.
Newark 12, N. J.

TEMPERATURE REGULATORS

A. W. Cash Co.
P. O. Box 551
Decatur, Ill.

TEXTILE SPECIALTIES

American Moistening Co.
260 W. Exchange St.
Providence 1, R. I.

TIE WIRES

Simplex Forms Systems, Inc.
5605 Industrial Ave.
Rockford, Ill.

TIMERS

Allied Radio Corp.
100 N. Western Ave.
Chicago 90, Ill.
See advertisement page 9

Eagle Signal Corp.
202-20th St.
Moline, Ill.

Elgin National Watch Co.
107 National St.
Elgin, Ill.

TITANIUM
Harvey Aluminum
19200 S. Western Ave.
Torrance, Calif.

TOOLS
Allied Radio Corp.
100 N. Western Ave.
Chicago 90, Ill.
See advertisement page 9

Chicago Pneumatic Tool Co.
6 E. 44th St.
New York 17, N. Y.

George L. Day Co., Inc.
1227-31 Niagara St.
Buffalo 13, N. Y.

Goddard & Goddard Co.
P. O. Box 68
Brightmoor Sta.
Detroit 23, Mich.

Kent-Moore Org., Inc.
28635 Mound Rd.
Warren, Mich.

Ramset Fastening System
12117 Berea Rd.
Cleveland 11, Ohio

Rockford Crescent Mfg. Co.
420 Buckbee St.
Rockford, Ill.

Thor Power Tool Co.
Prudential Plaza
Chicago 1, Ill.

TOOL & DIE STEEL
The Carpenter Steel Co.
Reading, Pa.

TOOLS, CEMENTED CARBIDE
Allegheny Ludlum Steel Corp.
Oliver Bldg.
Pittsburgh 22, Pa.

Goddard & Goddard Co.
P. O. Box 68
Brightmoor Sta.
Detroit 23, Mich.

TOOLS-POWDER ACTUATED
Velocity Power Tool Co.
201 N. Braddock Ave.
Pittsburgh 8, Pa.

TOOLS, PORTABLE ELECTRIC
The Black & Decker Mfg. Co.
E. Pennsylvania Ave.
Towson 4, Md.

TOOLS, SPECIAL SERVICE
Kent-Moore Org., Inc.
28635 Mound Rd.
Warren, Mich.

TRACING-BOX, PORTABLE
Porta-Trace, Inc.
Dept. A/E
342 Clinton St.
Binghamton, N. Y.

"Porta-Trace" Portable, Extra-Thin Tracing Box (Circle 27 on Inside Back Cover)

TRACING TABLE
Porta-Trace, Inc.
Dept. A/E
342 Clinton St.
Binghamton, N. Y.

TRACTORS
Allis-Chalmers
Buda Div.
1135 S. 70th St.
Milwaukee 1, Wis.

International Harvester Co.
180 N. Michigan Ave.
Chicago 1, Ill.

TRAFFIC DIRECTION EQUIP.
Eagle Signal Corp.
202-20th St.
Moline, Ill.

TRAILERS
Ferree Motor & Equip.
2451 Randleman Rd.
Greensboro, N. C.

Rogers Bros. Corp.
Albion, Pa.

TRANSFER MACHINES
George L. Day Co., Inc.
1227-31 Niagara St.
Buffalo 13, N. Y.

TRANSFORMERS
Acme Electric Corp.
Cuba, N. Y.

Allied Radio Corp.
100 N. Western Ave.
Chicago 90, Ill.
See advertisement page 9

Bradley Co., Inc.
3341 Arch St.
Philadelphia 4, Pa.

Edwards Co., Inc.
Norwalk, Conn.

The Strong Electric Corp.
87 City Park Ave.
Toledo 1, Ohio

The Superior Electric Co.
83 Laurel St.
Bristol, Conn.

TRANSISTORS
Allied Radio Corp.
100 N. Western Ave.
Chicago 90, Ill.
See advertisement page 9

Raytheon Mfg. Co.
55 Chapel St.
Newton 58, Mass.

TRANSITS
C. L. Berger & Sons, Inc.
37 Williams St.
Boston 19, Mass.

Carl Heinrich Co.
711 Concord Ave.
Cambridge 38, Mass.

Kegelman Bros.
County Line Rd.
Huntingdon Valley, Pa.

TRANSPORTATION
Ferree Motor & Equip.
2451 Randleman Rd.
Greensboro, N. C.

TRUCK BODIES
Aluminum Company of America
Alcoa Bldg.
Pittsburgh 19, Pa.

Anthony Co.
End of Baker
Streator, Ill.

TRUCK EQUIPMENT
Ferree Motor & Equip.
2451 Randleman Rd.
Greensboro, N. C.

TRUCKS, LIFT
Allis-Chalmers
Buda Div.
1135 S. 70th St.
Milwaukee 1, Wis.

Buck Equipment Corp.
720 Anderson Ferry Rd.
Cincinnati 38, Ohio

The Colson Corp.
Special Products Div.
440 Somerville Ave.
Somerville 32, Mass.

The Elwell-Parker Electric Co.
4326 St. Clair
Cleveland 3, Ohio

Lamson Mobilift Corp.
835 S. E. Main St.
Portland 14, Ore.

TUBING
Anchor Coupling Co., Inc.
342 N. Fourth St.
Libertyville, Ill.

Armco Steel Corp.
703 Curtis St.
Middletown, Ohio

The Babcock & Wilcox Co.
Tubular Products Div.
Beaver Falls, Pa.

The Babcock & Wilcox Co.
161 E. 42nd St.
New York 17, N. Y.

Revere Copper & Brass, Inc.
3615 Olive St.
St. Louis 8, Mo.

U. S. Flexible Tubing Co.
Drawer "C"
Bartlett, Ill.

TUBING, CORROSION RESISTANT
Bridgeport Brass Co.
30 Grand St.
Bridgeport 2, Conn.

Chase Brass & Copper Co.
236 Grand St.
Waterbury 20, Conn.

Corning Glass Works
Corning, N. Y.

Electric Steel Foundry
2141 N. W. 25th
Portland 13, Ore.

Flexaust Co.
100 Park Ave.
New York 17, N. Y.

Haveg Industries, Inc.
900 Greenbank Rd.
Wilmington 8, Del.

The Timken Roller Bearing Co.
1835 Dueber Ave., S.W.
Canton 6, Ohio

TUNNEL SHIELDS
Mayo Tunnel & Mine Equipment
P. O. Box 1413
Lancaster, Pa.

—U—

UNIVERSAL JOINTS
Curtis Universal Joint Co., Inc.
4A Birnie Ave.
Springfield 7, Mass.

—V—

VALVES
Circle Seal Products Co., Inc.
2181 East Foothill Blvd.
Pasadena, Calif.

VALVES & FITTINGS
A. W. Cash Co.
P. O. Box 551
Decatur, Ill.

Chase Brass & Copper Co.
236 Grand St.
Waterbury 20, Conn.

Conoflow Corp.
2100 Arch St.
Philadelphia 3, Pa.

The Fairbanks Co.
393 Lafayette St.
New York 3, N. Y.

Grinnell Co.
260 W. Exchange St.
Providence 1, R. I.

Ladish Co.
5481 S. Packard Ave.
Cudahy, Wis.

Minneapolis-Honeywell Regulator Co.
2753 4th Ave. So.
Minneapolis 9, Minn.

Sarco Co., Inc.
Sarcotherm Controls, Inc.
635 Madison Ave.
New York 22, N. Y.

Edward Valve, Inc.
Subsidiary of Rockwell Mfg. Co.
1200 W. 145th St.
E. Chicago, Ill.

Vonbee Co.
P. O. Box 538
Livingston, N. J.

Walworth Co.
60 E. 42nd St.
New York 17, N. Y.

The Weatherhead Co.
Ft. Wayne Div.
128 W. Washington Blvd.
Ft. Wayne, Ind.

Westinghouse Air Brake Co.
Industrial Products Div.
Box 36
Wilmerding, Pa.

VALVES, SOLENOID
American Chain & Cable Co., Inc.
929 Connecticut Ave.
Bridgeport 2, Conn.

1958 PROFESSIONAL ENGINEERS' BUYERS GUIDE

VALVES, SOLENOID (CONT.)

Automatic Switch Co.
50-56 Hanover Rd.
Florham Park, N. J.

Electric Steel Foundry
2141 N. W. 25th
Portland 13, Ore.

General Controls Co.
801 Allen Ave.
Glendale 1, Calif.

Westinghouse Air Brake Co.
Industrial Products Div.
Box 36
Wilmerding, Pa.

VENTILATING EQUIPMENT

American Blower
Div. of American-Standard
Detroit 32, Mich.

VENTILATORS

Ilg Electric Ventilating Co.
2850 N. Pulaski Rd.
Chicago 41, Ill.

VIBRATION CONTROLS

Endevco Corp.
161 E. California St.
Pasadena, Calif.

Fabreeka Products Co., Inc.
1190 Adams St.
Boston 24, Mass.

Robinson Aviation, Inc.
Teterboro, N. J.

VIBRATORS, CONCRETE

Marvel Equip. Corp.
215 Eagle St.
Brooklyn 22, N. Y.

VISES

Alva Allen Industries
35 & 13 Jct.
Clinton, Mo.

VOLTAGE REGULATORS

Allied Radio Corp.
100 N. Western Ave.
Chicago 90, Ill.
See advertisement page 9

The Superior Electric Co.
83 Laurel St.
Bristol, Conn.

—W—

WASHING MACHINES, INDUSTRIAL

International Conveyer & Washer Corp.
652 E. Fort St.
Detroit 26, Mich.

WASTE HEAT RECOVERY EQUIPMENT

The Friscom-Russell Co.
Massillon, Ohio

J. O. Ross Engineering Corp.
444 Madison Ave.
New York 22, N. Y.

WASTE TREATMENT EQUIPMENT

Chicago Pump Co.-Subsidiary of Food Machinery & Chemical Corp.
622 Diversey Parkway
Chicago 14, Ill.

Fischer & Porter Co.
13 Warminster Rd.
Hatboro, Pa.

General Filter Co.
925 2nd St.
Ames, Iowa

Graver Water Conditioning Co.
216 W. 14th St.
New York 11, N. Y.

Pacific Flush Tank Co.
4241 Ravenswood Ave.
Chicago 13, Ill.

The Weinman Pump Mfg. Co.
290 Spruce St.
Columbus 8, Ohio

WATER CONDITIONING EQUIPMENT

The American Well Works
100 N. Broadway
Aurora, Ill.

General Filter Co.
925 2nd St.
Ames, Iowa

Graver Water Conditioning Co.
216 W. 14th St.
New York 11, N. Y.

The F. E. Myers & Bro. Co.
Orange St.
Ashland, Ohio

Newage Industries Inc.
222 York Rd.
Jenkintown, Pa.

Red Jacket Mfg. Co.
P. O. Box 270
Davenport, Iowa

The Herbert Wolcott Company
Wolcottwood
RFD 5
Columbia, Mo.

WATER CONTROL APPARATUS

General Filter Co.
925 2nd St.
Ames, Iowa

Leupold & Stevens Instruments, Inc.
4445 N.E. Glisan St.
Portland 13, Ore.

Newage Industries, Inc.
222 York Rd.
Jenkintown, Pa.

Sparling Meter Co.
225 N. Temple City Blvd.
El Monte, Calif.

WATER HEATERS

Coe Manufacturing Co.
Banks St.
Painesville, Ohio

WATER INTAKE

Ranney Method Water Supplies, Inc.
P. O. Box 5415
841 Alton Ave.
Columbus 19, Ohio

WATER REFINING EQUIPMENT

American Water Softener Co.
Lehigh & 4th St.
Philadelphia 33, Pa.

WATER SUPPLY

Ranney Method Water Supplies, Inc.
P. O. Box 5415
841 Alton Ave.
Columbus 19, Ohio

WATER TESTING SETS

W. A. Taylor & Co.
7300 York Rd.
Baltimore 4, Md.

WATER TREATING CHEMICALS

Allyn Chemical Co.
4537 Mayfield Rd.
Cleveland 21, Ohio

Hagan Chemical & Controls, Inc.
323 Fourth Ave.
Pittsburgh 30, Pa.

Surface Protection Co.
16799 Euclid Ave.
Cleveland 12, Ohio

Western Chemical Co.
713 Washington St.
Kansas City 5, Mo.

The Herbert Wolcott Company
Wolcottwood
RFD 5
Columbia, Mo.

Wyandotte Chemicals Corp.
Wyandotte, Mich.

WATER TREATMENT EQUIPMENT

Chain Belt Co.
4701 W. Greenfield Ave.
Milwaukee 1, Wis.

WAY-PROTECTORS, MACHINE TOOL

A & A Mfg. Co., Inc.
712 S. 12th St.
Milwaukee 4, Wis.

WEED KILLERS (sodium chlorate)

Hooker Electrochemical Co.
26 Iroquois St.
Niagara Falls, N. Y.

WELDING ELECTRODES (ALLOY)

Air Reduction Sales Co.
150 E. 42nd St.
New York 17, N. Y.

Eutectic Welding Alloys Corp.
40-40 172nd St.
Flushing 58, N. Y.

Hobart Brothers Co.
Hobart Square
Troy, Ohio

National Cylinder Gas Co.
840 No. Michigan Ave.
Chicago 11, Ill.

WELDING EQUIPMENT, SUPPLIES

Air Reduction Sales Co.
150 E. 42nd St.
New York 17, N. Y.

Hobart Brothers Co.
Hobart Square
Troy, Ohio

National Cylinder Gas Co.
840 No. Michigan Ave.
Chicago 11, Ill.

WELDING MACHINERY

George L. Day Co., Inc.
1227-31 Niagara St.
Buffalo 13, N. Y.

WHITE PRINT COPYING MACHINES & SUPPLIES

Ozalid Div.
General Aniline & Film Corp.
19 Ansco Rd.
Johnson City, N. Y.

WINCHES, HAND

Morgen Manufacturing Co.
117 West Third St.
Yankton, S. Dak.

WIRE CLOTH

Iowa Manufacturing Co.
916-16th St. N.E.
Cedar Rapids, Iowa

Newark Wire Cloth Co.
351 Verona Ave.
Newark 4, N. J.

WIRE FABRIC

Wire Reinforcement Institute Inc.
1049 National Press Bldg.
Washington 4, D. C.

WIRE ROPE

Jones & Laughlin Steel Corp.
3 Gateway Center
Pittsburgh 30, Pa.

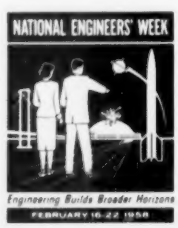
—Z—

ZINC & TITANIUM PIGMENTS

New Jersey Zinc Co.
160 Front St.
New York 38, N. Y.

ZINC & ZINC ALLOYS

New Jersey Zinc Co.
160 Front St.
New York 38, N. Y.



Vogt Testifies Before House On Legislation

"A tax equalization program such as that proposed by the Jenkins-Keogh legislation would do much to stimulate and encourage the development of the self-reliant, individualist scientist or engineer who is free to take the risk of establishing a general or specialized consulting office," a representative of NSPE has testified before the House Ways and Means Committee.

Robert C. Vogt, a partner in the consulting engineering firm of Vogt, Ivers, Seaman & Associates, Cincinnati, Ohio, testified that NSPE "fully endorsed and supported" the Jenkins-Keogh Bills, H.R. 9 and 10, which would permit a tax deferment to self-employed citizens on sums placed in private retirement plans or annuity insurance.

Mr. Vogt emphasized that the use of consultants served to promote "the most effective utilization of the scarce skills which plague our defense effort." Present tax laws place a "roadblock" in the way of stimulating interest in consulting work on the part of professional engineers, he testified.

A consultant in science or engineering should be able to "offer clients new ideas, techniques or methods—the lifeblood of technological progress—without having to pay the penalty of sacrificing personal security which is available through the retirement programs of employers under the current provisions of the Internal Revenue Code," Mr. Vogt testified.

P.E. PUBLICITY CHAIRMEN

YOU have a date for FEBRUARY 24th!

That's the time to send your Engineers' Week story to the *American Engineer.*

As usual, space will be limited but we will give as wide coverage as possible. So get the news of the week's outstanding events in the mail EARLY.

FEBRUARY 24th is the day to do it!

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A HANDY AND DISTINCTIVE BINDER FOR 12 ISSUES OF THE AMERICAN ENGINEER

Now you can build an easy reference to the many fine articles and features which appear in the American Engineer by slipping your monthly issues into this new handsome maroon (silver lettered) DuPont fabricord binder.

The binder has 12 removable heavy-tempered flat steel rods and solid nickeled screw posts on each end which are easily operated. Though rugged, the binder is beautifully finished and has a reinforced stiff back which is lined for greater wear.

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With Our Members . . .

Blair County

Pennsylvania Chapter Is Host to More Than 100 High School Seniors

The Blair County Chapter of the Pennsylvania SPE was host to more than 100 high school seniors interested in engineering as a career at a recent meeting.

These young seniors from all of the high schools in the Blair County area were invited by the Chapter to view an animated model of an atomic power plant and to hear Dr. J. H. Wright of the Westinghouse Electric Corporation discuss this important subject.

The program was in celebration of National Engineers' Week. The engineers of that area took this opportunity to further the interests of local high school seniors in the field of engineering as a possible future career.

The program was arranged by M. M. Devorris and L. L. Gwin, co-chairmen of the Program Committee. The meeting was presided over by President Thomas L. Caum, who welcomed the visiting high school seniors.

Dr. Wright explained the components of the atomic power plant and, with the use of the animated model, pointed out the fundamental operations of this new source of power. Dr. Wright brought out the fact that in the atomic power plant only the steam producing end of the plant is substantially changed.

"Perhaps our greatest concern," Dr. Wright said, "must be not so much with the present status of our scientific efforts, which is substantially equal to or ahead of most of our competitors, but rather to insure through our educational system the continued development of young men and women who will follow in the field of science and engineering and thus keep America strong in the years that lie ahead. The nation that is ahead in its supply of energy will still be the winner in the long run, and our efforts in the field of atomic power can guarantee our leadership in providing the unlimited source of energy we will need for our future growth," he concluded.

Dr. Wright was kept busy for almost an hour after the lecture by the questions and discussions of the young men and women from the local schools. These embryo engineers and scientists spent considerable time questioning Dr. Wright about the operation of the model atomic power plant and its many scientific phases.

View Model Plant

Dr. James H. Wright (left) of the Westinghouse Electric Corporation uses model of atomic power plant during lecture at a meeting of the Blair County Chapter, Pennsylvania SPE. More than 100 seniors from the high schools of Blair County were guests. Watching Mr. Wright (l. to r.) are: Robert Over, Society vice president; M. M. Devorris and Lewis L. Gwin, Program Committee co-chairman; Thomas L. Caum, president; T. C. Pitzer, Westinghouse application engineer; Fred Weber, Westinghouse advertising and sales promotion representative, and C. J. Patete, secretary-treasurer.

L. A. Callen Appointed To Colorado Board

Loy A. Callen was recently appointed by the City Council to Colorado Springs, Colo., to serve as a member of the Colorado Springs Contractors Licensing and Building Code Board.

This action stemmed largely as result of the active role in community affairs by the Pikes Peak Chapter of the Professional Engineers of Colorado, an NSPE affiliate. City Manager John M. Biery requested the Chapter to submit the name of an engineer for consideration because of their prominence in the community.

The Chapter selected its president, Mr. Callen, for the position.

Hold Satellite Program Discussion in Missouri

The Missouri SPE, together with other technical groups and professional societies, jointly sponsored a timely and important meeting recently.

Donald J. Markarian, project engineer of The Martin Co., discussed "Project Vanguard—The United States Earth Satellite Program."

Due to the intense interest in the satellite program, the meeting was sponsored on a joint basis by the MSPE, AIEE, ASME, and other organizations.

Community Planning Topic of Discussion

Arthur Reed, director of Urban Renewal for the City of Syracuse, was guest speaker at the January meeting of the Central New York Chapter of the New York State SPE.

His topic was "Community Planning and Urban Renewal." Previous to his appointment to his present position almost two years ago, Mr. Reed served as Director of Community Development for the New York Division of Housing.

Canal Zone SPE Receives Charter As Affiliate of National Society

Dr. Clark A. Dunn, vice president of the Southwestern Region of NSPE and presidential nominee for 1958-59, recently presented the official National Society charter to the Canal Zone SPE.

A full schedule of activities was arranged for Dr. Dunn during his January visit, including a luncheon given by the board of directors of the CZSPE and members of the Canal Zone Board of Registration for Architects and Professional Engineers. The ladies of the CZSPE gave a luncheon at the same time for Mrs. Dunn.

Accompanied by L. B. Sartain, president of the Canal Zone Society, and his wife, Dr. and Mrs. Dunn were taken to the Administration Building at Balboa Heights where they met Major General William E. Potter, P.E., Governor of the Canal Zone, and Colonel Hugh M. Arnold, P.E., who is Lt. Governor.

Frank Lerchen was chairman of the committee which handled the visit.

Dunn Visits Canal Zone

A Charter Night Dinner highlighted Dr. Dunn's recent visit to the Canal Zone. In the photo above are, l. to r.: Mrs. Hugh M. Arnold, L. B. Sartain, president of the CZSPE; Dr. Dunn, shown addressing the group; Col. Arnold; Mrs. Dunn, and E. W. Zelnick, CZSPE national director. (See story above.)

Chapter Past Presidents

Past presidents of the Canton Regional Society of Professional Engineers (affiliated with the Ohio SPE and NSPE) were guests of the Chapter at a recent meeting. They are, seated, l. to r.: Edward H. Jackson, W. Carl Anderson, Charles H. Fritche, Ray C. Klopfenstine, George W. Craiglow, Robert A. Weinland, Herbert A. Grauman, and George L. Bliss, and standing, l. to r.: William H. Gebhart, Walter E. Eynon, Richard W. Pickard, Paul F. Chester, Evan C. Coldren, Lewis D. Cisler, Douglas T. Greth, and Carl F. Schoenbaum. Also of special interest at the meeting was a discussion on unity led by Paul A. Harlamert, NSPE national director, and Wayne E. Ault, chairman of NSPE's Engineers in Industry Committee.

By Mrs. Harry G. Kennedy, Chairman of the Ladies Auxiliary Advisory Committee.

Values of ladies auxiliaries to the professional engineer and to his society are found in the following objectives:*

It is the earnest endeavor of all auxiliaries:

To be of service, in every way possible, to the engineer, his profession and his society;

To promote a closer bond of friendship among the engineers and their wives and families by encouraging social and educational activities;

To encourage increase of membership and stimulate attendance of chapter, state and national meetings;

To gain recognition for the engineering profession through publicity;

To encourage education in the engineering field;

To promote a greater interest in knowledge of and appreciation of the engineering profession;

To conduct all services in accordance with wishes, suggestions and approval of the engineer, chapter and society.

* Obtained from auxiliary reports.

The Women's Auxiliary of the Connecticut Society of Professional Engineers (one of the few state auxiliaries) is quickly responding to the new idea of their State Society—that of forming Future Engineer of America Chapters. These chapters are made up of high school and college students who are interested in engineering. The Connecticut State Auxiliary has made available a scholarship in the amount of $200 to a member of a Future Engineer of America Chapter sponsored by the CSPE for the best essay on "Engineering Builds Broader Horizons"—the 1958 Engineers' Week theme. Runner-up in the contest shall receive a second prize of $50. The

(Continued on page 59)

Alphabetized by States . . .
Alabama-Michigan

PROFESSIONAL DIRECTORY

PALMER AND BAKER ENGINEERS, INC.
Consulting Engineers—Architects
Surveys, Reports, Design, Supervision, Consultation, Traffic Problems, Tunnels, Bridges, Highways, Airports, Industrial Buildings, Waterfront & Harbor Structures, Complete Soils, Materials & Chemical Laboratories.
Mobile, Ala. New Orleans, La.
Washington, D. C.

LITCHFIELD ENGINEERING SERVICE
Consulting Engineers
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Auxiliaries

(Continued from page 57)

certificates will be awarded during Engineers' Week on February 22, 1958, at the Waverly Inn, Cheshire, Connecticut.

Number nine for Pennsylvania—Ladies Auxiliary, that is! Off to a good start is the "Wives of Professional Engineers" of the Washington County Chapter of PSPE. Members of this Chapter urged the formation of this auxiliary because they will play host to the State convention in 1959, and know the ladies can be a big help.

Temporary officers are Mrs. Raymond Godfrey, chairman, and Mrs. John T. O'Brien, secretary-treasurer. Mrs. Godfrey writes that her committee chairmen are very enthusiastic and everyone has been most cooperative. At their first regular meeting members displayed their hobbies, each telling something about her work of art and the reason for choosing it. After the program they made gifts and favors for a Christmas dinner meeting when they entertained their husbands in the George Washington Hotel on December 12.

The Topeka Auxiliary of the Kansas Engineering Society is looking forward to entertaining the wives of KES members who will attend the fiftieth annual meeting in Topeka, February 28-March 1, 1958. Mrs. G. O. McDonald, the president for 1958, reports they have adopted a new set of bylaws making the first vice president, program chairman and the second vice president, social chairman.

Annual Ladies Night

The Lorain County Society of Professional Engineers, an NSPE affiliate in Ohio, recently held their annual Ladies Night and among those attending were, l. to r.: Donald E. Kropp, OSPE secretary; Mrs. Kropp; Homer Borton, OSPE vice president; John Gilkey, president of the Lorain County Society, and Mrs. Borton.

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Allison Neff Speaks At N. C. Convention

Engineers need an organization to speak for the profession in government and society, a past president of the National Society of Professional Engineers said at the winter convention of the Professional Engineers of North Carolina.

Allison C. Neff, of Middletown, Ohio, stated: "Unity organization can be of great service to the members of our legislatures and the Congress in the drafting of bills which will affect the profession," he told the engineers.

It would also help teach professional consciousness, he said. "Some colleges graduate men who are filled to the ears with technical knowledge but with no more professional consciousness than a Jay Bird."

A golden opportunity to integrate the branches of engineering was missed 100 years ago, he said, but present activities are leading to unification.

"A strong unity organization is needed to teach the teachers that sense of group consciousness, that pride and *esprit de corps* are mandatory for profession growth," he continued.

Executive Committee

The Pikes Peak Chapter of the Professional Engineers of Colorado, an NSPE affiliate, more than doubled its membership in 1957 with an increase from thirty-three to seventy-five members. Playing an important part in the Chapter's growth has been their Executive Committee shown above. They are, l. to r.: Robert L. Koons, State Board member; George C. Tackels, secretary-treasurer; George D. Morris, State Board member; George L. Williams, vice president, and Loy A. Callen, president.

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Letters

(Continued from page 5)

Even under the "Coover Plan" there will still be problems, but the organizations will each be in better shape to meet them than at present.

E. F. George, P.E.,
Little Rock, Ark.

Hells Canyon . . .

Dear Editor:

The recent issue of the NSPE Annual Report for 1956-1957, under the heading of "Legislation and Ethics" discloses a most unethical policy of our own NSPE Board.

Certainly engineering is ". . . that profession which plays a vital role in the development of natural resources for the benefit of all the people consistent with sound economic and governmental policy" as quoted from the NSPE Board "policy", and such a statement by the Board serves only to further question their ethics and motives in recommending exploitation of our natural resources at Hells Canyon by a private profit-taking monopoly instead of full development for the benefit of all the people.

The National Society of Professional Engineers has been built on the premise that it is an organization devoted to engineers and engineering; if the Board is turning it into a political lobby, their actions should not be camouflaged under the pseudonym of professional engineering.

Engineers are divided in their political, economic and religious beliefs, and they should support this individuality in the political parties, the economic structures and the religious faiths of their choice, but let us observe the propriety of each and maintain engineering ethics and practices in the National Society of Professional Engineers without regard to our fellow engineers policies on non-engineering matters.

Howard A. Berry, P. E.,
Carthage, Mo.

► Editor's Note: With regard to the specific policy in question, it must be realized that all Society policies flow from actions and decisions of the Board of Directors. When the Board adopted this policy there was a very spirited discussion as to whether NSPE should enter into such a controversial question. The viewpoint expressed by Reader Berry was presented vigorously at that time, but the majority of the Directors felt otherwise and in accordance with democratic procedures, the majority view prevailed. It would be appropriate to add that Society policies adopted by the Board are never final. The Board can always reconsider them and revise or rescind those which should be revised or rescinded in the light of new developments or changes in sentiment. The policy in question will undoubtedly come before the Board again automatically through a general review of all policies, or earlier if it is made the subject of a resolution from a state society.

Corporate Practice . . .

Dear Editor:

The engineers in New York State have just taken decisive action to oppose public practice of the profession through corporations. Presented with a choice of endorsing a "controlled" type of corporate practice or no change in the New York State law at this time to extend such practice, the state-wide membership of the Society voted against corporate practice by more than two to one.

The referendum was conducted as a result of a split decision on Corporate Public Practice by the Joint Professional Committee for Study of the Education Law, which was organized some two years ago to study this problem in New York State. The representatives of seven professional and technical societies submitted a majority report opposing corporate practice signed by eight committee members and a minority report favoring it signed by six members. The majority report was endorsed overwhelmingly in the referendum.

This action is significant because it is a considered decision by licensed engineers who have had many opportunities to study the pros and cons of the issue. By contrast, past support for corporate practice has come predominantly from "committees" representing interested corporations, or from councils or directors of societies representing specialized branches of engineering rather than from polls of licensed engineers practicing in all professional areas. Generally, these societies have no requirement that all members must have passed their New York State examinations for professional licensure. As an example, two of these societies, whose representatives signed the minority report of the Joint Committee, have only small minorities of members legally registered for the public practice of the engineering profession.

In this "Sputnik" era, when all efforts should be directed to raising practice standards in engineering, it is encouraging to find engineers in New York resisting attempts to lower the high standards for personal responsibility required for public practice of the profession in that State.

James P. O'Donnell,
New York, N. Y.

Reward The Gifted . . .

Dear Editor:

In the November issue of AMERICAN ENGINEER the NSPE Board sagely stands against "Sputnik inspired crash engineer training programs."

The writer has had the advantage of early training in the school system of Switzerland, one of the oldest democracies in the world. The Swiss must know how to survive. They have not had the benefit of the resources of a new world to insulate them from reality. Beginning in the second grade they start their search for good minds. They establish every week the rating of the members of each class in terms of scholarship. The top few are rewarded with government paid winter and summer excursions and vacations. The top scholars are given university training paid for by the government.

The Swiss must discover and train every nimble mind; they cannot afford to overlook one. In terms of survival, the only items of value are the engines and the skills and knowledge in the brain cells of the members of a society. Engineering produces the engines of production and defense; education charges the minds with the skills and knowledge necessary to run the engines. . . .

The NSPE stands out against "crash" programs. It should also point out that as our natural resources are depleted, and as our enemies grow in strength it will be necessary for the United States also to search out its trainable scientific and engineering minds for social and economic rewards. The existing equality of wage scales between tradesmen, professors, scientists, and engineers, most certainly will not suffice.

F. Gordon Yates, P.E.,
Colorado Springs, Colo.

Unity and Congress . . .

Dear Editor:

Unity? Of course the engineering profession needs unity! Today I received two publications in the mail. One said, "In the midst of the hysterical cries for more and more trained engineers and scientists, the layoffs of the engineers and scientists which we now have continue." The other said, "six-day school weeks and a multiplicity of scholarships are being advanced in every campaign speech—all at a time when there is actually somewhat of a let-up in the demand for engineers."

Although these two publications represented the views of two, large but separate engineering organizations, the sentiment appeared to be the same. However, there does not seem to be any doubt in any one's mind that when Congressional action is taken, it will be largely without the advice of either organization. Why? Because the two engineering organizations have spent so much time bickering in the past that they have generally lowered the prestige of each other . . . and maybe of the engineering profession as a whole.

This is the fruit of disunity. While the giants are struggling, the midgets will assume leadership. It seems rather paradoxical, that engineers who have changed the face of the earth, have so little control over their own destiny.

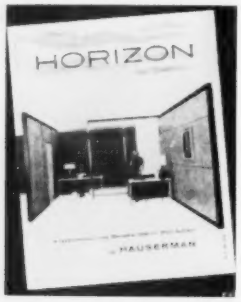
Robert P. Goldstein, P.E.,
Pittsburgh, Pa.

► Editor's Note: One Organization which does present its views to Congress is the NSPE. During the last session of Congress the Society appeared before Committees dozens of times. And, as regards the "shortage," the NSPE statement against any "crash" program for training engineers has been sent to all members of the House and Senate and warmly received. Testimony on this subject will no doubt follow.

...NEW LITERATURE...

To help the offering firms determine which literature you require, when requesting an item, be sure to list all specifications shown . . . and say you saw it in the AMERICAN ENGINEER.

MOVABLE WALL SYSTEM—A full-color, six-page brochure (A.I.A. File No. 35-H-6) is being offered by the E. F. Hauserman Company, Cleveland, describing the firm's advanced new movable interior wall system, Horizon. "Custom interior walls at far less than custom cost" is the basic idea behind the new system, as outlined in the brochure. The Horizon system, according to the manu-



facturer, has flexibility of design, material, and function. The new brochure illustrates the system's complete movability and custom selection of panel materials, feature inserts, modules, post shapes, glass patterns, and panel colors. Maintenance is said to be easy and economical. The brochure is available free of charge from the E. F. Hauserman Company, 7516 Grant Avenue, Cleveland 5, Ohio. In Canada, it may be obtained from Hauserman of Canada, Ltd., 91 Yonge St., Toronto, Ont.

—AE—

HYDRAULIC MULTIPRESS — An attractive, 28-page, two-color catalog, designed to show how a multitude of manufacturing problems can be solved through use of the Denison Hydraulic Multipress has been issued by the Denison Engineering Division, American Brake Shoe Company, Columbus, Ohio. The catalog contains all-inclusive information about the Multipress. The 8½" by 11" catalog contains actual photographs of the Multipress in action on the production line with detailed descriptions of the various operations possible on this versatile press. The illustrated section describing the operation of the press and accessories should prove to be an idea boon to production men. In all, it is the most ambitious catalog ever undertaken in the field of hydraulics promotion. Catalog 120-D can be obtained free of obligation by writing to Robert C. Clouse, Advertising Manager, the Denison Engineering Division, American Brake Shoe Company, Columbus 16, Ohio

AIR CONDITIONING—A brochure on the "Multi-Weathermaker System," a plan for the air conditioning of multi-story buildings with packaged equipment without large initial cash outlays, is being offered to architects, building owners, building management firms, and consulting engineers by Carrier Corporation. The brochure cites other advantages of this type of air conditioning, such as rapid tax write-offs, ease, adaptability and rapidity of installation. Included in Carrier's Multi-Weathermaker Plan, as outlined in the brochure, is a survey of the building's total cooling needs, location of individual Weathermakers, centralization of utility services and sequence of emplacement. The Multi-Weathermaker System brochure may be obtained by writing to the Weathermaker Department, Carrier Corporation, Syracuse 1, N. Y.

—AE—

EPHEMERIS—Special instructions for operation and adjustment of the Gurley Optical Plummet Transits are included as a special supplement to the 1958 edition of the Gurley Ephemeris. Complete step-by-step details are given for those using Optical Plummets for the first time and those field men who own the instrument and want to use proper methods of adjustment. Also, for the third year, the Gurley Ephemeris features charts which will simplify the computation of Polaris. The annual Gurley publication also includes an Almanac, listing twenty-eight selected stars for determining stellar observations. This Almanac itself is an abridgment of the American Nautical Almanac. It gives complete instructions for determining azimuths by methods similar to those used in observations of the sun and Polaris. The 98-page booklet also contains charts for the sun and Polaris, as well as definitions of astronomical terms and many sample problems. The Ephemeris will be sent free, upon request, to practicing surveyors and engineers and to instructors and students of surveying. Write: W. & L. E. Gurley, Troy, N. Y.

—AE—

EXCAVATOR—A new 4-page bulletin on the crawler mounted 805 Excavator, recently placed into production by Koehring Division, Milwaukee, Wis., is now available. In addition to those showing job applications, there are also photos that illustrate carbody, upper machinery, lower crawler frames and lower crawler assemblies. Copies of the new bulletin can be obtained by writing directly to Koehring Division, 3026 W. Concordia Ave., Milwaukee 16, Wis., or contacting your nearest Koehring distributor.

LIFT TRUCK DESIGN—A behind-the-scenes account of the many engineering principles involved in the production of a modern fork lift truck, plus a close analysis of the individual components that go into the finished product, are contained in the latest edition of "What Makes Towmotor Tick," an informative brochure on materials handling equipment, now available from Towmotor Cor-

poration, Cleveland, Ohio. Subjects covered in a concise and interesting manner include many advanced design features and graphically illustrated in the new booklet are Towmotor's new type mast, new one-piece frame, Towmotor's new counterweight design, and the special armor plate which protects the lift truck operator and vital moving parts. Also outlined are many exclusive Towmotor features related to functional body styling, drive comfort and convenience, improved operating and handling ease. For a copy of the booklet write Towmotor Corporation, 1226 E. 152nd St., Cleveland 10, Ohio.

—AE—

PRECISION BEARINGS — A 12-page booklet, "Ball Bearing Yield and System Isoelasticity," has been prepared by The Barden Corporation of Danbury, Conn., manufacturer of precision ball bearings. The booklet is designed to assist users in the application of precision instrument bearings. It offers comprehensive background data on radial and axial play, axial take-up and preloading, as well as isoelastic bearings and achievement of system isoelasticity. Of particular interest to gyro builders is a section on requirements for spin axis bearings subjected to transient or vibratory forces. The effect of temperature differentials on selection of preload arrangement is also described in detail. Copies of the booklet, along with additional information about Barden, its product lines and engineering services, are available on request.

These listings are informational only and are not an endorsement of the products, nor of the manufacturer's claims.

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Minimum 3 lines.
Undisplayed: $1.80 per line.
Displayed: Same rate as General Advertising.

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Displayed: General Advertising rates, less 50%.
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Positions Available

ENGINEERING POSITIONS OPEN

City of Duluth, Minnesota

CITY ENGINEER—Salary Open

Requires Civil Engineer Registration; ten years of progressively responsible experience in planning, design, construction and administration; individual selected must be capable of taking complete charge of engineering requirements for extensive enlargement of street, highway and sewer construction program.

CIVIL ENGINEER IV—Salary $478.00 to $581.00

Requires college degree with major in Civil Engineering and two years of civil engineering experience or equivalent. Registration as Civil or Highway Engineer required.

Contact Administrative Assistant to the Mayor, City Hall

Positions Available

Executive Director to carry out public relations and administrative duties for 69-year-old Iowa Engineering Society. Engineering background preferred. Salary open depending upon qualifications. Inquire with resume to 418 Hubbell Building, Des Moines 9, Iowa.

Positions Available

Position Available

A nationally known tin can manufacturer has an excellent position available for a graduate Mechanical or Industrial Engineer as a Project Engineer in its Container Division, located in the Midwest.

Applicant should have approximately five years of experience in the designing, repairing, installing and trouble-shooting of all types of tin can manufacturing equipment. Should also be familiar with the design and construction of standard lines of tin cans as well as the latest types of metal containers such as aerosol cans, etc.

This is a position of promotional opportunity. Excellent fringe benefit program. Please state age, formal education, experience, salary desired and other information. All replies confidential. AMERICAN ENGINEER, Box 500.

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What's New

This column describes new products of general interest to professional engineers. For further information, circle the item number on opposite page and mail to the AMERICAN ENGINEER.

These listings are informational and are not an endorsement of the products, nor of the manufacturer's claims.

PLASTIC FILM — Item 30

A new type of plastic that supplements the use of polyethylene film in the construction and building field, but which has completely different properties and applications, is making its appearance on numerous jobs around the country as a temporary glazing material, a low cost enclosure for tool and storage sheds, and as siding or roofing material.

COLOR MATCHING — Item 31

A machine that determines how the average human eye will see a color under various lighting conditions has been developed. It is called a universal digital tristimulus integrator. The device, built for use with a spectrophotometer, which traces the reflectance curve of the color sample, converts the analogue motion of the spectrophotometer into digital pulses. The pulses are then sent to a digital integrator, which sums them according to a program fed into it by means of a punched tape.

CAB-FORWARD TRUCK — Item 32

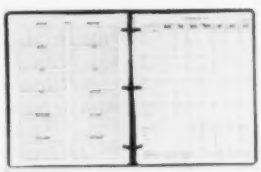
Mack's new cab-forward N models are adaptable both for light and heavy hauling in the city or over the road. They feature extra-large wrap-around windshield, wide doors which enclose steps and set back front axle permitting maximum payload within legal limits.

DRAFTING PENCIL — Item 33

A new drafting pencil has been announced by J. S. Staedtler, Inc. It is the Mars Technico push-button lead holder, with a knurled finger-grip which eliminates all possibility of the pencil slipping in the hand. These Mars lead holders are well balanced, light in weight, have a noiseless smooth-working, low friction clutch mechanism to hold leads securely. The Mars Technico is available with degree-markings (both fixed and adjustable) for time-saving, positive identification of leads.

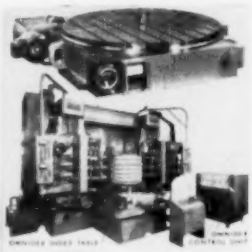
PRODUCTION AID — Item 34

A new production aid—Schedule-Pal—has been announced. The format is 8½ x 11 inches to fit three-ring binders. Each sheet handles five jobs for the period of one week. By using succeeding sheets, production of work may be scheduled for six months or longer. Firms may find this new form useful, especially when the production manager must keep track of many orders and their progress in many departments.



ELECTRONIC INDEX TABLE — Item 35

A 42" Omnidex index table, electronically controlled by conventional tape or card, has been introduced by the Superior Machine and Engineering Company. While developed for their Omnidex automatic index table, it can be used with any standard or non-standard machine tool of sufficient capacity. Used independently, it serves as a precision inspection machine.



THREE-WAY GUN — Item 36

A patented process and tool for production of Fiber-glass laminates which reduces both labor and material costs has been announced by Rand Development Corporation. A new tool is a three-way gun which sprays activated resin and chopped fiber-glass strands simultaneously and is called the Rand Fiber-Resin Depositor. The tool will deposit up to fifteen pounds of high strength laminate per minute, and is designed for operation by one man. It can reduce the costs of laminating large parts such as a fourteen foot boat as much as forty per cent.

"FLIPLESS" SCALE — Item 37

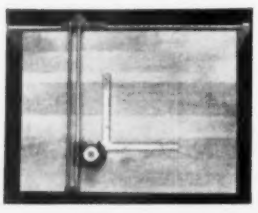
According to the Book of Rules quoted by most instrument makers, you can't show eight different scales without two, or even three sides, to print them on. But this new scale displays *all* eight on a *single* side. All eight scales have been laid out side by side instead of one under the other.

PHOTODRAWING TECHNIQUE — Item 38

A new Kodak technique called photodrawing is aiding the work of the nation's design engineers. Photodrawing, or photodrafting as it is sometimes called, is a technique of using photographs to convey engineering drawing information in a form easier to visualize. Photographs are reproduced on a translucent material. To this, engineering detail and even additional superimposed sketches can be added.

DRAFTING MACHINE — Item 39

A new drafting machine is now being offered by the Glideline Corporation. The machine offers: complete, unobstructed board coverage; elimination of machine overhang; ability to work with the drawing board at *any* angle, without the necessity of changing counterweights or counterbalances; and controls conveniently located for one-hand operation.



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Engineer

American Engineer

PROFESSIONAL ENGINEER...

Are you busy? . . . Need more information?

Keeping up-to-date on new products and new developments is a "must" for the registered, professional engineer. With this thought in mind, the AMERICAN ENGINEER recently initiated a READERS' SERVICE DEPARTMENT for its more than 16,000 readers—and the response has been overwhelming!

WHAT'S THE STORY?

The story is just this: to take advantage of our READERS' SERVICE DEPARTMENT you must first read the advertisements in this issue and note that each ad makes reference to a number on the coupon below. If you want more information about any product simply circle the corresponding number on the handy coupon—and MAIL TODAY! We will forward your requests to the advertiser and the information will then be sent *directly to you*. It's easy, try it.

A boon to the busy engineer!

AMERICAN ENGINEER
2029 K Street, N.W.
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FEBRUARY

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11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40

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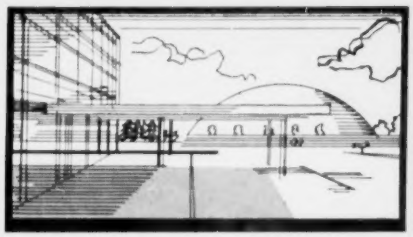

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It houses scientists seeking solutions to man's myriad problems — designers striving for perfection of form and style — technical experts expecting, one day, to achieve the impossible.

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